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ABSTRACT

A South African project investigated effective methods of English language instruction for educationally disadvantaged black gold mine workers. Four instructors taught eight 3-week intensive classes, four by traditional language teaching methods and four by methods used at the Institute for Language Teaching of the University of Stellenbosch (INTUS). These methods promote accelerated learning and include physical and mental relaxation, music to broaden the brain's perceptual abilities, and use of a specially-written story adapted to a particular group of learners with archetypal characters and theme. English language and cognitive skills were measured before and after the courses. Results indicate clearly that this population can learn an appreciable amount of English using this approach. Both experimental and control groups improved their language skills. The experimental (INTUS approach) group showed a greater average gain, not statistically significant, in oral skills, and also improved in cognitive skills, while the control group remained constant. Both groups showed improvement in attitude and affective variables. The experimental group had more vitality and was more critical and thoughtful, while the control group appeared passive. Wider use of and research on the INTUS approach is recommended. (MSE)

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UP FROM UNDER:

ENGLISH TRAINING ON

THE MINES

Report on 1988 Research Project Conducted at Gold Fields Training Services

by

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22 August 1989

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UP FROM UNDER: ENGLISH TRAINING ON THE MINES

Executive Summary

The central question in this project concerns how English can best be taught on the mines. Specifically, can black workers with low educational levels learn an appreciable amount of English in a three-week intensive course? Does the Institute for Language Teaching (INTUS) special approach yield greater gains in English, ability to think, and attitude than traditional classroom methods? Selection of learners, placement in courses, and the connection between language and thinking were also observed.

A study was done over six months, designed to have four instructors teaching English courses to experimental groups using the INTUS special approach, and the same four instructors teaching English to control groups using traditional methods. English language skills and thinking skills were measured before and after each course. Qualitative data were gathered from learners, instructors and supervisors.

Results clearly show that black workers with low educational levels can learn an appreciable amount of English in a three-week intensive course. All of the qualitative data and one of the two quantitative measures support this statement.

Both experimental and control groups improved in English. On the scored interview, the experimental group showed a greater average gain, though not statistically significant, than the control group.

For thinking skill, the experimental group definitely improved, and the control group stayed the same, according to instructors and evidence from learner feedback.

In attitude and affective variables, both groups improved. The experimental group showed greater vitality, and appeared more critical and thoughtful. The control group appeared more passive. Instructors reported that the experimental group improved more than the control group in self-image and confidence.

The study yielded useful results in spite of some methodological and operational problems. The instructors were trained only in the INTUS special approach and had little or no experience with traditional language teaching. Thus, in many respects, the control-group

instruction may not have differed enough from the experimental-group instruction. Recommendations include wider use of the INTUS special approach, further study of placement, and follow-up study regarding workers' subsequent performance on the job.

CONTENTS

1	**INTRODUCTION**		1
1.1		Statement of the problem	2
1.2		Rationale of the study	3
	1.2.1	The INTUS special approach	3
	1.2.2	Statement of the question	3
	1.2.3	The study	3
	1.2.4	Limitations of the study	4
1.3		Hypotheses	4
2	**METHOD OF THE STUDY**		5
2.1		Overview of the question	5
2.2		Selection of subjects	5
	2.2.1	Able to benefit: ITB (Industrial Test Battery)	6
	2.2.2	Basic English: LITNUM (Literacy and Numeracy Test)	6
	2.2.3	Basic English: EPPI (English Proficiency Placement Interview)	7
	2.2.4	Summary of selection criteria	7
2.3		Assignment to control and experimental groups	8
2.4		Instructors	8
2.5		Treatment of experimental and control groups	8
	2.5.1	Method used for experimental group	9
	2.5.2	Method used for control group	10
2.6		Quantitative data: Pre-tests and post-tests	11
	2.6.1	English, written: BALT B (Basic Arithmetic and Language Test Batt)	11
	2.6.2	English, oral: Oral interview	12
	2.6.3	Thinking, nonverbal written: ITB	12
	2.6.4	Thinking, oral: Group test of thinking skills	13

2.7		Qualitative data	14
	2.7.1	Language Background Questionnaire (LBQ)	14
	2.7.2	Questionnaire for learners	14
	2.7.3	Questionnare for instructors	14
	2.7.4	Instructor's daily log	15
2.8		Analysis of the data	15
3		**PRESENTATION OF DATA AND RESULTS**	16
3.1		Selection of learners for the study	16
3.2		Conclusions regarding selection	18
3.3		Demographics of sample	18
3.4		Analysis of quantitative data	30
	3.4.1	Quantitative data tables and interpretation	30
	3.4.2	Discussion of quantitative results	34
	3.4.3	Analysis of interview scores	37
	3.4.4	Correlation of results	39
3.5		Analysis of qualitative data	41
	3.5.1	Results and discussion of learner questionnaires	41
	3.5.2	Results and discussion of questionnaire for instructors	48
	3.5.3	Results and discussion of instructor logs	54
	3.5.4	Checklist for supervisors	59
4		**CONCLUSIONS AND RECOMMENDATIONS**	60
4.1		Appreciable amount of English learned	61
4.2		Hypotheses and results	61
	4.2.1	English language skills	61
	4.2.2	Thinking skills	62
	4.2.3	Attitude	62
4.3		Conclusions regarding tests	63
4.4		Problems with the research	64
4.5		Final observations	64
4.6		Recommendations	65

REFERENCES 68

APPENDICES 70

A English Proficiency Placement Interview (EPPI) 71
B The Teaching of Thinking 74
C Directions to Scorers 80
D Score Sheet for Analysis of Language Samples on Tape 82
E Interview Assessment Scale 83
F Language Background Questionnaire (LBQ) 84
G Questionnaire for Learners 86
H Questionnaire for Instructors 88
I Instructor's Daily Log - Experimental Course 90
J Instructor's Daily Log - Control Course 93

TABLES

Table 1: Number of learners per group 19
Table 2: Place of origin 20
Table 3: Mother tongue of learners 21
Table 4: First additional language spoken in addition to the mother tongue 22
Table 5: Second additional language spoken 23
Table 6: Third additional language spoken 24
Table 7: Language read or written: First language reported 25
Table 8: Language read or written: Second language reported 26
Table 9: Language read or written: Third language reported 27
Table 10: Age of learners 27
Table 11: Standard school-leaving 28
Table 12: Years worked on the mines 29
Table 13: Means and standard deviations on the pre-tests 30
Table 14: Means and standard deviations of difference scores 32
Table 15: Analysis of interview scores (Carroll's Bands) 38
Table 16: Correlations between selected measures (Pearson correlations) 39

UP FROM UNDER: ENGLISH TRAINING ON THE MINES

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1 INTRODUCTION

The mining industry is the backbone of most African economic activity in that the export of gold and other minerals generates the main source of foreign exchange and thus forms the basis of trade with the rest of the world. The mining industry in South Africa alone provides 8,5% of all jobs, and the vast majority of those jobs are held by blacks, from many different countries. According to the 1988 Report of the Central Statistical Service, of the 743 065 jobs in the mining industry, 641 933 or 86,4% were held by blacks. For each job one can multiply by 6 to arrive at a conservative estimate of the number of people who are dependants of these workers (Snyman, 1989). These jobs also generate foreign exchange for several African countries and help to keep their development process going forward.

Most jobs on the mines can be done by unskilled workers. Adults who have left school even in the first few years may find employment on the mines. The Chamber of Mines estimates that about 80% of mine workers are functionally illiterate. In recent years mining companies have identified benefits of a better educated work force, and they have taken the position of social responsibility toward their workers. There are efforts to upgrade their work force by specific training and by general education as well, among which language has had a crucial place, specifically English as a second or additional language. Legal reforms in 1988 have removed barriers to employment or advancement based on race. The current thrust of in-house training is to provide a variety of opportunities for workers at many levels to improve their education and skills on a continuous basis.

The need for communication among a multilingual work force has brought the conclusion that ultimately one shared language is needed, and for purposes of intercultural and international communication, that language is English. A further reason for English is that workers have asked for it as a replacement of the pidgin language Fanagalo, which is seen by many to be undignified, or even restrictive and humiliating. Most of the major mining houses are rooted in English-speaking cultures as well. Many black communities seem to opt for English as a Language of Wider Communication (LWC).

1.1 STATEMENT OF THE PROBLEM

English functions as an LWC for much of Africa, and a further look at general demographics reveals that there are very few speakers of English as a mother tongue. Virtually all of black Africa has a mother tongue other than English (Lanham & Prinsloo, 1978). In South Africa, which is home to the largest community of mother-tongue English speakers in sub-Saharan Africa, that community is 1,6 million, only about 6% of the country's population. No one language is dominant, with two official and nine officially recognised languages. According to the SOUTH AFRICAN YEARBOOK 1988/89, Afrikaans, which along with English is one of the two official national languages, has about 2,5 million speakers. There are four black language groups, and each group may contain several languages which are mutually intelligible within that group. The Nguni is largest with 13,6 million mother-tongue speakers. The Sotho group has about 8 million speakers, the Tsonga, 1,2 million, and the Venda, about 500 000. The need of an LWC, which in this case is English, is clear. On the mines, as many as 99% of those employed do not have English as a mother tongue.

The specific question then arises: How can English best be taught on the mines? Some instruction is available on a released-time basis, for which workers receive full salary; therefore such time must be used to best advantage. It is the central idea of this study to investigate ways to maximize short-term, intensive courses, already a part of training on the mines, to bring about the most language learning possible. If benefits such as greater skill in thinking and more positive attitudes toward self can be achieved, so much the better.

One such gold mining company approached the Institute for Language Teaching (INTUS), which is known for its innovative language teaching methods, to develop such a course at an intermediate level. The Institute did just that, and designed a study to test its own approach against the intermediate English course that was already in place at the company training center. A comparison of results was done, including the teaching-learning process as part and parcel of the study. It is a general difficulty of educational research that it is rooted in the real world and thus subject to a great variety of human factors that cannot be easily controlled. Nevertheless, a range of objective, subjective, qualitative and quantitative data was gathered and examined, and conclusions were then drawn.

1.2 RATIONALE OF THE STUDY

1.2.1 THE INTUS SPECIAL APPROACH

Language is taught by accelerated methods involving use of physical and mental relaxation, use of specific kinds of music to widen the perceptual ability of the brain, and use of a specially written story adapted to a particular group of learners with archetypal characters and theme. There is evidence that this approach fosters better learning along with increased self-confidence and self-esteem, or to put it another way, it seems to foster a more positive attitude toward self, others, and life in general. Studies by Felix (1988), Odendaal (1987), Botha (1986), and Dhority (1984) among others provide evidence of its efficacy. This approach has developed from the method of teaching known as Suggestopedia, which was introduced in South Africa by INTUS in the late seventies and has been successfully used and researched under the leadership of INTUS since then (van der Vyver & Botha, 1989).

This method was further enhanced by the incorporation of thinking skills as content as well as process into language classes. Learners can then develop thinking ability in the medium of English, hopefully leading to improvement in both language and cognitive functioning. It is a practical impossibility to separate language and thought, so the connection is a natural one, and it is made more explicit and systematic by the INTUS special approach.

1.2.2 STATEMENT OF THE QUESTION

The INTUS special approach has been applied, developed, and transformed over several years of practical implementation, and this process is an on-going one. Its utility for many groups of learners has been established, but so far it has not been studied in the context of teaching a second or additional language to adult black Africans in industry with relatively low levels of education. It is necessary to know if it is as applicable as it seems, and to what extent. Besides examining language learning, it is necessary to see to what extent thinking in the new language can be learned. Since all second or additional language learning is cross-cultural, one must determine whether the approach is culturally appropriate in this case. Does it meet the needs of the workers as well as the conditions of training? Then one must decide if it can be extended to other members and groups within this population of learners.

1.2.3 THE STUDY

A study was devised that would utilize the INTUS special approach in experimental groups and use the company's previous language training course in control groups. With other factors held steady, the design would allow differences deriving from the special approach

to be seen and studied clearly. The study ran in late 1988, and the method of the study, its results, conclusions and recommendations are given below.

1.2.4 LIMITATIONS OF THE STUDY

Though the study was planned to be done on 200 learners, many fewer than that actually took part, for reasons shown later. The total number of subjects was 74, and just 38 of those had both pre-test and post-test scores. When one groups them for different analyses, the number per subgroup was as low as 12. One does not expect statistically significant differences to be observable with such small groups. Some differences did actually appear, however. While much of the quantitative data did not show significant differences, the tests were at least tried, and clear results came through in some of the correlations and in the qualitative data. These results seem safely generalizable to African mine workers with low levels of education and skill in English.

1.3 HYPOTHESES

Given similar conditions, the experimental groups are expected to make greater gains than the control groups in:

1.3.1 English language skill, as measured by a written test of English, an oral test, by questionnaire reports of learners, instructors, and supervisors, and by instructor logs and reports.

1.3.2 Thinking skill, as measured by a written test of thinking; by an oral test; by questionnaire reports of learners, instructors, and supervisors; and by instructor logs and reports. Thinking skill in this context is seen from two perspectives: the actual improvement of one's cognitive ability and the development of skill in using the second additional language (referred to as L2), in this case English, by means of the language practice gained by practising various thinking tools, which were taught and learned in English.

1.3.3 Attitude, including self-confidence, self-image, and motivation, as noted in questionnaires given to learners and instructors, and as noted in instructor logs and reports throughout the courses.

Questionnaires were sent to supervisors of learners after the course for evaluation of effects on the job.

Other questions addressed were: Can a meaningful amount of English be learned in three weeks? Can any of the tests be used for better placement in courses? Are there

relationships among the various tests? Is there a connection between improvement in language and improvement in thinking?

2 METHOD OF THE STUDY

2.1 OVERVIEW OF THE QUESTION

The question has been raised: How can English best be taught on the mines? Specifically, can adult black workers with low educational levels learn an appreciable amount of English in a three-week intensive course? Does the INTUS special approach yield greater gains in English, ability to think, and attitude (affective matters) than traditional classroom methods? Selection and placement of learners in English courses were studied, and other factors were observed as they became evident.

To address these questions, the present study was designed in which English was taught to black team leaders at one company, Gold Fields of South Africa. Four experimental and four control groups were taught, and a range of data including pre- and post-tests and questionnaires was gathered. Results of the experimental and control groups were compared through statistical analysis, through analysis of scorers trained in language assessment, through qualitative analysis, and through other observations such as test correlations. Conclusions were drawn and recommendations were made to the mining company.

2.2 SELECTION OF SUBJECTS

The company was engaged in training a large number of workers at the first level of supervision. With a choice between administrative officers and team leaders, the choice was made to study team leaders. It was felt that workers in this position were already supervisors, in that their job is to organize work gangs which actually carry out the basic work of mining. Working underground, team leaders and their gangs generally gather and load the gold-bearing rock after it has been blasted loose. Above ground, they may see to maintenance or transportation and the like. When there is chance for advancement, team leaders are likely candidates to move up the ladder. They would be helped by a command of English.

The next step was to determine which team leaders should be chosen. This issue addresses selection and placement of learners in the classes. There were 5 712 team leaders estimated as employed by the company, and evidence gathered from interviews with

various training personnel indicated that there was a wide range of background and ability among them. The course that was developed according to the INTUS special approach, and the control course, were geared for intermediate learners. Two criteria for selection of appropriate subjects were then set: evidence of being able to benefit from further training and a command of very basic English. A further consideration always present throughout the study was the effort to make efficient use of information already at hand, and care to have the least possible interference with the company's production.

2.2.1 Able to benefit: ITB (Industrial Test Battery)

The Chamber of Mines in general has long been dealing with this issue for all workers including those who are not literate in any language. In connection with the National Institute for Personnel Research (NIPR) of the Human Sciences Research Council, a nonverbal test has been developed to assess thinking ability, the Industrial Test Battery (ITB). It is a recognized test, it has been in use in the company, and its reliability and validity figures are acceptable.

The ITB has three sub-tests, the Anomalous Concepts Test (ACT), the Anomalous Figures Test (AFT), and the Series Induction Test (SIT). According to a Gold Fields Training Services (GFTS) summary of "Skills Tests and Levels of Available Language Tests," each item in the ACT presents a group of figures, and the learner must identify common features by selecting the one that does not fit. The AFT involves spatial relations, or the appearance of figures from different angles. The SIT requires the learner to find the principles by which a series is made and determine which item comes next.

The company policy is that this test be given to all workers upon their return from annual leave, so that persons with learning potential can be identified and training opportunities offered to them as feasible. Based on the use of this test by the Chamber of Mines and based on their data (Veldsman, 1988), along with input from GFTS instructors, the decision was made to select persons with a Stanine 6 (Level 6 out of nine levels) on the ITB as participants in the study.

2.2.2 Basic English: LITNUM (Literacy and Numeracy Test)

As time and conditions permit, workers are systematically being given a test of literacy and numeracy, the LITNUM. The reliability and validity figures were acceptable. The mathematics score was not considered relevant, but the English part of it was. Scores on the vocabulary and comprehension sub-tests range from 1 - 10 on each test, total of 20. Learners who scored in the middle of the upper half could probably be called intermediate. The effort was made to exclude top scores, because those learners may know too much

English for this course. However, as the LITNUM was to be tested as a possible placement device, it seemed important to determine which scores would yield homogeneous groups.

First the number of available subjects had to be determined. Data from two mines were easily available, showing that about 7% of workers from each mine were team leaders tested by the LITNUM, 5 712 total estimate for all the mines. The number of team leaders at each of the 20 levels of the LITNUM was determined for two mines, from a total of 493 at Libanon and 604 total at Doornfontein, and percents per score were calculated and extrapolated to all team leaders. Thus, at LITNUM score 16 there should have been 211 tested team leaders (3,7% of 5 712). At LITNUM score 15, the estimate was 303; at score 14, 234; and at score 13, 246.

The groups for the study were to be about 12 each. Two groups per three-week session, and eight sessions, yields 96 experimental and 96 control learners, a sufficient number of subjects (Ss) for statistical analysis at several levels. The number of learners needed was 192. With more than that available per LITNUM score, it seemed reasonable to try to sort on the LITNUM. With a small Standard Error of Measurement of the test (SEM = 1,56), a three-score range would yield similar subjects. Scores 14, 15, and 16 were selected.

2.2.3 Basic English: EPPI (English Proficiency Placement Interview)

It is common knowledge in the field of second language (L2) teaching that learners can know how to read and write, but not speak or listen in the L2, and they can know how to speak and listen fluently but not read or write. Because the LITNUM is a written test, an oral test was needed as well. It would also serve a useful function in placement.

A five-level scale was devised by Roux and Puhl (1988) specifically for use within Gold Fields. They named it the EPPI, English Proficiency Placement Interview. They introduced it to instructors and conducted training in its use for instructors who teach on the mines. It is given in Appendix A. Subjects who scored 3 or 5 on the EPPI were considered to have a basic oral command of English and were requested for the study.

2.2.4 Summary of selection criteria

Criteria for learners for experimental and control groups were operationalized as follows:

Ability to learn: ITB Stanine 6

Command of Basic English: LITNUM scores of 14 to 16

EPPI: Scores of 3 or 5.

2.3 ASSIGNMENT TO CONTROL AND EXPERIMENTAL GROUPS

Any learner with the above criteria could be placed in any of the groups. The least interference with production was the main consideration. Learners would probably come from various mines, and all mines were considered similar for purposes of the study. All team leaders, hence all subjects, were male.

2.4 INSTRUCTORS

There were four instructors teaching in the study. The same four taught both experimental and control groups. All were in their 20's, and all had been employed as language instructors by GFTS for at least a year. All had a tertiary qualification, one an honour's degree. All had attended an intensive week-long training seminar in accelerated teaching methods conducted by INTUS about six months before the start of the study. The Senior Instructor of the four was trained further in a three-week seminar in the teaching of thinking, and she communicated the main ideas and thinking skills to other members of the instructor team.

This study formed part of their practice teaching for earning their certificate as teachers of the INTUS special approach used in the experimental groups. The instructors taught both control and experimental groups, thus eliminating the variable of different teachers as a confounding influence. They alternated their teaching in the study, teaching for three weeks, doing other work, teaching three weeks, etc. One instructor was responsible for one group; however, they have always worked together as a team, and they continued to do so in this study. Thus effects cannot be attributed to any one instructor.

In summary, it can be said that all of the instructors were trained by INTUS in using the special approach, and were developing their skill in it by means of teaching courses in this study.

2.5 TREATMENT OF EXPERIMENTAL AND CONTROL GROUPS

A total of eight alternating three-week intensive courses were given at the GFTS centre at Kloof Mine from July to December 1988. The courses were alternated so that any effects generated by events or circumstances external to the courses could be spread over both control and experimental groups. Two groups were taught simultaneously, and to avoid the inevitable comparisons and possible feelings of envy, these two groups would both be

control groups for three weeks, then they would both be experimental groups for three weeks, alternatively. Classes were held for 35 hours per week, for a total of 105 hours of instruction. Time needed for pre- and post-testing was included in the 105 hours. All of the subjects had similar lodging arrangements, similar food, and classes at the GFTS training centre. With the same instructors, the only difference was the teaching method or approach.

Both experimental and control groups were taught English as an L2 at a low intermediate level. The main emphasis was oral ability, with some reading and writing, spelling, and basic principles of grammar. Elementary social skills were included. Both groups received good language teaching, using about the same games, materials, posters, flash cards, and dramatizations. Both used physical relaxation techniques, and both were unconventional in that learners were active, sat on the floor for some activities, and were taught interactively. Both were assigned homework, the experimental group completing thinking problems, and the control group completing English assignments.

2.5.1 METHOD USED FOR EXPERIMENTAL GROUP

The INTUS special approach was used (mentioned earlier in this report). One can say that it is an adapted and enriched suggestopedic approach. The course was given in a specially developed and well-equipped room, as required in this approach. The room was curtained and carpeted, with overhead projector and built-in screen. Each learner had a large comfortable chair. There were activity areas, extra materials, posters on the walls, a wide range of stimuli on the periphery of the class (hence called "peripherals"). Because music is used at certain times in the special cycle of teaching activities, a high-fidelity record-tape player was essential. In all, the room projected a homey, interesting, and encouraging atmosphere.

As required by the approach, materials were specially created for workers on the mines who are learning English at a low intermediate level. The text, THE WAY TO THE HEART, was developed by the instructors. It is the story of Henry, who finishes matric, looks for work on the mines, and becomes one of the first black recruits for Industrial Relations Assistant. Henry has a range of friends on the mines, including shift bosses and team leaders. He plays soccer and finds a girlfriend. In the process, Henry also learns some skills of thinking. Henry, like all of us, is engaged in a search, and in many ways his search is one with which these learners can identify. The thinking skills were embedded in the story and taught implicitly as part of the language programme. Supporting materials, such as posters and handouts, were also developed.

To explain in more detail, the INTUS special approach at GFTS was organized around the following cycle: physical relaxation, mental relaxation, activations, and the concert session. Physical relaxation exercises improve deep breathing and blood circulation, and they assist concentration, bonding of people in the class, and creation of a positive atmosphere. Mental relaxation, using baroque background music, consisted of an activity such as remembering an early pleasant learning experience, imaging a visit to a favourite spot, or guided imagery through some of the text.

Next in the cycle came activations, such as dramatizations, language games, and songs, which "activate" or help the learner use and internalize more strongly the language material which has already been read and understood. The concert session is the input phase of the next act in the text. The instructor read the new act first to the accompaniment of classical music, and read it again to learners in a relaxed state to the accompaniment of baroque music.

The embedded thinking skills were also taught explicitly in the L2 as a component of the language curriculum, and part of language practice took the form of problem-solving in the L2. The inclusion of thinking skills makes the INTUS special approach unique and something new in its own right in the field of L2 teaching. The explicit teaching of thinking skills took place in a more traditional venue.

There are many ways to break down thinking skills into teachable units, and the way utilized here is based on the Cognitive Research Trust (CoRT) of Dr Edward de Bono (1986). Six skills are taken from his first set, Cort 1, and his famous Six Thinking Hats were taught. The skills were: Positive-Negative-Interesting (PNI), Consider All Factors (CAF), First Important Priorities (FIP), Aims, Goals, and Objectives (AGO), Consequences and Sequels (C & S), and Other Person's View (OPV). These skills and the Six Hats are more fully explained in Appendix B, "The Teaching of Thinking."

2.5.2 METHOD USED FOR CONTROL GROUP

The venue was a modern classroom for adults, with carpeted floors, curtains, moveable tables with padded chairs, an overhead projector and built-in screen, and a hi-fi record-tape system. The colours were muted and soft on the eye. Posters for teaching were on the walls, and instructional support materials were there also. The room was pleasant though still a classroom. Classical music was used at times as background, especially when students were doing writing work. Some instruction took place in a language laboratory.

The materials were taken from three main sources, COURSE FOR ADULTS IN READING AND WRITING, START WITH ENGLISH, AND SPEAK BETTER ENGLISH.

The COURSE FOR ADULTS IN READING AND WRITING (CARW), of the Department of Education and Training, has as a main objective the teaching of very basic writing. It includes word knowledge, grammar, structures. Parts of it were selected for class use.

START WITH ENGLISH provided grammatical practice exercises from which instructors selected as needed.

SPEAK BETTER ENGLISH is a commercially prepared book and tape course with good quality sound and excellent English pronunciation as a model for learners. It is the story of Mr. Lourens, who arrives at Heathrow, goes to London, and experiences a hotel, a bank, and restaurants. He travels around, meets various people, shops, buys clothes, visits a museum, and has a run-in with police. Language activities are built around his adventures.

The control group, like the experimental group, attended class all day, and an active, interactive approach was used; it would have been impossible to use a lecture approach for this amount of class time daily.

2.6 QUANTITATIVE DATA: PRE-TESTS AND POST-TESTS

2.6.1 ENGLISH, WRITTEN: BALT B (Basic Arithmetic and Language Test Battery)

The English sub-tests of the Basic Arithmetic and Language Test Battery (BALT B) developed by the Chamber of Mines (1975, revised 1985) were used as a written pre-test and post-test. There are 20 items of vocabulary, 20 of usage, and 15 of comprehension, for a total of 55 items. All of the items in English are multiple choice, with five choices of response. It is designed to test English as an L2. According to the GFTS summary of "Skills Tests and Levels of Available Language Tests," the vocabulary section tests knowledge of meanings of words along with ability to relate two similar meanings. The usage section tests ability to use grammar principles to form correct simple sentences. The comprehension section tests ability to understand the content of a passage of continuous prose.

The BALT B is administered by the company to determine the level of literacy of the worker, after it has been determined by the LITNUM that the worker is literate in English. The BALT B has been in use for several years, and the reliability and validity figures are acceptable.

In the past the instructors of English have tried to use the BALT B English score as a means of determining placement, seeing that a relationship has been made between a person's score on this test and Standards 1 - 6. The idea of using BALT B for placement was intended to be further explored in the study.

2.6.2 ENGLISH, ORAL: ORAL INTERVIEW

As the same learner may vary regarding level of skill for written and for oral language, oral tests were considered essential to this study.

A sample of each individual learner's English was recorded before and again after the course. The first one was done on video, and as that proved too cumbersome, audio tapes were subsequently used. The instructors who were not teaching the students in class conducted the interview. Steps were taken to put the learner at ease, as the situation seemed stressful to many learners. Some interviews were made with the instructor conversing with more than one learner, but then it was difficult to distinguish the learners' voices for assessment purposes. The point of the interview was to have the learner show how much English he could handle comfortably.

Tapes were collected and then copied and re-marked with a special code so that they could be scored blindly, without knowledge by the scorers of whether the tape was a pre-test or a post-test, or whether the tape was made with an experimental or control group. (See Appendix C for Directions to Scorers, and Appendix D for Score Sheet for Analysis of Language Samples on Tape.) These copies were given to two scorers, who scored each language sample according to the Interview Assessment Scale by Carroll (1980), given in Appendix E. The range of scores was expressed in bands from one to nine, with plus signs used to indicate half a band. For example, a learner could score a 4, a 4.5, a 5, a 5.5, etc.

Results of the pre-test scores were compared with post-test scores.

2.6.3 THINKING, NONVERBAL WRITTEN: ITB

As the learner already had an ITB score generated within the preceding year, and as general ability tests have been shown to reflect gains when thinking is explicitly taught, it seemed reasonable to use such a test as a post-test. A further reason supporting this decision is that ability tests are considered to hold constant for about three years without direct teaching of thinking. Its range of possible scores seemed to allow for perceptible gains, and the fact that selection was to be made of learners in Stanine 6 allowed room for improvement. Also, a new form was being developed, but it turned out not to have been available for use as yet.

2.6.4 THINKING, ORAL: GROUP TEST OF THINKING SKILLS

The Group Test of Thinking Skills is grounded in the theory of de Bono (1976) as applied in the CoRT instructional programme (1986). The complete program has about 70 tools for thinking, of which the first series, CoRT 1, is the foundation. Six thinking tools from CoRT 1 were taught, along with the Six Thinking Hats. To test whether the students learned to use the thinking tools, they were given problems similar to those used in class, usually in small groups of three or four students led by an instructor other than their course instructor. CoRT 1 focuses on Tools for Breadth, or ways to get a wide scope of ideas and aspects from which to develop possible solutions to a problem, and for this reason test items were developed that would allow learners to show breadth in their approach.

This approach was suggested by de Bono in his book TEACHING THINKING (1976) and in CoRT Teachers' Notes (de Bono, 1986) as well as confirmed by him in 1988 (personal communication). Reference was made to the extensive work done in this manner by J. Edwards (1988) and Edwards & Baldauf (1987) in Australia in testing thinking in educational settings. The work of S. D. Edwards (1985) using this method was also noted.

Creating the appropriate test items, or problems, had to be done. Items used with other groups such as secondary school students or business people would not be useful here. The items had to be about something the learner could relate to, preferably on job-related topics. The way of testing was an idea count, in which the experimental learners would be expected to generate a broader range of ideas (that is, more ideas) than the control learners. The items had to be of moderate difficulty; if they were too easy, both groups would find a lot to say about them, and if they were too hard, neither group would find much to say. Ideally only field-tested items would be used, but this proved impractical to be done before the study commenced.

Several possible test items were generated. The instructors suggested some, and the researcher along with an instructor met with a group of black instructors from the mines to create more items. Existing materials were scrutinized. A list of earlier items generated by Roux and Puhl was re-examined. Finally, about 20 items were selected. The instructors were requested to rank them according to difficulty as "hard, middle, or easy." The hard and easy ones were discarded for testing purposes, and four items from the middle group were selected. Two were for the pre-test, and two for the post-test.

The same four items were to be given to all groups in a cross-over design. This means that in one three-week experimental course, there were four items, two pre- and two post-test. In the next experimental course, the post-test items were to be the pre-test ones, and the pre-test ones now became the post-test items. In this way, the items have "crossed over."

One can compare results for an item when it was pre-tested and post-tested, and one can also compare experimental and control results.

The sessions in which each group approached the problems and generated solutions were taped, and the tapes were later analyzed by an independent scorer who was grounded in L2 teaching and theory as well as in the teaching of thinking. The scorer listed all ideas of the groups. As in the scoring of the interview, the blind approach was used so that the scorer did not know which tapes were pre- or post-tests, or which were experimental or control. Comparison was made between solutions at the beginning and end of each course, and between solutions of experimental and control groups.

2.7 QUALITATIVE DATA

2.7.1 LANGUAGE BACKGROUND QUESTIONNAIRE (LBQ)

The Language Background Questionnaire contained 15 items such as country of origin, languages spoken, languages read or written, TV and radio input in English, age, standard of education, years on the mines, and an item for comments. Instructors were asked to help learners fill out the LBQ sometime during the course, and it could even be used as part of the class work for contextualized English study. Information from the LBQ was compiled to describe the sample of learners and to provide information for possible use in explanation and interpretation of results. The LBQ is given in Appendix F.

2.7.2 QUESTIONNAIRE FOR LEARNERS

The questionnaire contained straightforward questions about likes, dislikes, and questions that learners in both experimental and control courses may have, their perceptions of what they learned in the course, the utility of the course, the difficulty level, and the time span. One question was directed at attitudes, confidence, and self-image. The questionnaire is given in Appendix G.

2.7.3 QUESTIONNAIRE FOR INSTRUCTORS

The instructor questionnaire contained ten items on things the instructor liked best about teaching the course, things they did not like, questions they have, and a question as to whether they felt different after from before teaching the course. Five questions concerned their observations of how the students responded to the course. The final item asked for a comment. The questionnaire is found in Appendix H.

The instructor was to fill out a questionnaire on completion of each course taught. The questionnaires were then analyzed, and control-group results were compared with experimental-group results.

2.7.4 INSTRUCTOR'S DAILY LOG

Instructors were asked to note events in the course on a daily basis. A form was provided for their convenience, given in Appendix I for experimental courses, and Appendix J for control course. The purpose was to gain a fuller idea of significant factors and events in the courses.

Because the instructors found the log format cumbersome, it was adapted to that of a final report for each course written by the instructor at the end of the course. The final report was used instead of the log for the second half of the study. Results noted on the report are incorporated into the log discussion.

2.8 ANALYSIS OF THE DATA

To summarize, the data gathered in the study were:

1 The Language Background Questionnaire (LBQ)

2 Selection: ITB Stanine, LITNUM, and EPPI.

3 Pre-test:
ITB scores on each of the three sub-tests and the total score
BALT B scores on each of the three English sub-tests and the total score
Interview score
Group score, idea count on each of two thinking problems.

4 Post-test: Same as pre-test.

5 Questionnaires of learners and instructors, instructor logs and reports, and checklists from
supervisors.

The LBQ was tabulated to describe the sample under study. It was expected to yield data which could then be related to results on the various tests to predict achievement and possibly to assist in selection.

Selection data was to be analyzed in conjunction with pre-test and post-test data to study its utility in prediction and hence placement.

Pre-test and post-test scores on the ITB, the BALT B, and the interview were to be compared for the various experimental and control groups using a multiple analysis of variance. This analysis would show any pre-post differences along with the interaction of those differences. T-tests to show differences between specific groups would be used as appropriate.

The group thinking skill results were to be compared on idea count as well as qualitatively.

Questionnaires, logs, and reports were to analyzed qualitatively.

Feedback from supervisors of the team leaders was analyzed.

3 PRESENTATION OF DATA AND RESULTS

3.1 SELECTION OF LEARNERS FOR THE STUDY

According to selection criteria for the study, learners were to have an ITB stanine of 6, a LITNUM English score from 14 - 16, and a 3 or a 5 on the EPPI.

When the first group of learners arrived on 18 July for the course, it was something of a shock. Two groups of 12 learners each, or 24, were expected. Instead, there were 11 learners in all. Ten had LITNUM scores, with five within the specified range and other scores higher. Only one had an ITB stanine report. Seven had an ITB total score, with no sub-test scores, and seven, not necessarily the same ones, had a BALT B total score, with no sub-test scores. Four had EPPI scores, all at 3.

The number of learners was less than half expected, but at least those that arrived were within the EPPI range and partially within the LITNUM range, and the one ITB stanine score was a 6, as specified.

The instructors and their supervisors were very concerned, and they worked diligently to investigate and to implement the criteria as set. It was not so easy to conduct research involving co-ordination and communication among researcher, instructors, mines, and learners. Meanwhile, the two groups, Control Group 1 and Control Group 2, were merged into one, called Control Group 12. (As it happened, such merging had to be done elsewhere in the study.) Because of several factors, not all data were gathered.

The second three-week course began on 8 August, and 13 learners arrived, so matters were improving. ITB stanine scores were available for six learners, ranging from 6 - 9. LITNUM scores, also for those six, ranged from 16 - 19. EPPI scores were all 3 or 5. Though problems were still being identified, the procedures were being implemented, and it looked hopeful for the following group.

For the third three-week period, beginning August 29, 10 learners arrived, this time having no selection information at all. The Senior Instructor had by now discovered some developments indirectly affecting the study. She reported on 8 September that the company had just begun to train team leaders to get blasting certificates, with the result that the available numbers of team leaders who could be taken off the job were split between two training opportunities. Lower numbers could now be expected.

There was also some question whether the evaluators on the mines were implementing the EPPI adequately. They had been trained in a special one-day seminar by the researcher. By the end of that seminar, they were making consistent judgements of learner proficiency. However, with little background and no close supervision in this area, it seems that they could not sustain their level of skill. The conclusion was drawn that these instructors on the mines as a group could not be expected to function at this level of oral language assessment. Either they needed more specific tasks to conduct with the learners, with right and wrong answers, or they should not be asked to assess.

At this point the GFTS instructors made plans to actually go to the mines and give the EPPI themselves. The criterion of the ITB was now deleted. Criteria moved down to 11 on the LITNUM, and stayed 3 or 5 on the EPPI.

Unfortunately the numbers for training and hence for the study did not improve, despite the best efforts of the instructors, master trainers and researcher. It was then agreed to take anyone with some English. However, numbers did not increase in any case, so instead of 192 subjects, the overall number was 74, and considering those that had the both basic pre- and post-test scores, the number of subjects (Ss) became 38.

With a number this small, there was no chance of doing the sophisticated analyses planned, with 4 sizeable (that is, over 20 Ss) experimental and 4 sizeable control groups. The next best step was to add all the subjects in experimental classes and call them the experimental group, n = 41 with partial data, and n = 18 with full data. Likewise, all the control groups were added to make up the control group, n = 33 with partial data and n = 20 with full data. The numbers still varied slightly according to the specific measure.

3.2 CONCLUSIONS REGARDING SELECTION

Though numbers were smaller, some learnings of value to GFTS emerged.

1 All the Ss except one had scores of 12 - 20 and ITB stanines of 5 - 9, with half the scores reported at stanine 9. Even when these two scores accompany each other, that is, both in the upper ranges, it seemed not to be sufficient for placement purposes. The qualitative data (below) show that the groups were still not homogeneous enough. Thus a more refined selection procedure, perhaps a test, is needed.

2 The EPPI is not practicable as a selection or testing procedure as implemented by English language trainers without a knowledge of L2 theory and research. The master trainers seem able to use it effectively, but not other persons.

3.3 DEMOGRAPHICS OF SAMPLE

Information to describe this specific group under study was gathered from questionnaires given to all learners by instructors within instructional time. This information is presented in Tables 1 - 12.

Table 1: Number of learners per group

	Frequency	Percent
C12	11	14.9
C34	9	12.2
C56	8	10.8
C78	5	6.8
E12	13	17.6
E34	12	16.2
E56	9	12.2
E78	7	9.5
Total	**74**	**100.2***

C = Control Group
E = Experimental Group

*The sum is more than 100% due to rounding off of the above percents. This is true for the other tables as well.

There were eight groups in the study, with enough learners to form a group and ensure group dynamics in each case. The numbers should have been around 24 for each three-week session. With small numbers it is difficult if not impossible to generalize very widely. However, by combining all the experimental and all the control groups, one has just enough group size to attempt some basic analyses.

Table 2: Place of origin

	Frequency	Percent
Botswana	6	9.5
Ciskei	3	4.8
Lesotho	22	34.9
Mozambique	2	3.2
South Africa	10	15.9
Swaziland	3	4.8
Transkei	17	27.0
Did not answer	11	-
Total	**63**	**100.1**

The learners in the study reported that they came from seven main areas in Southern Africa, with the two areas of greatest representation being Lesotho and Transkei. Learners from these two areas seem to comprise half the subjects in the study. Seen in another way, about half are from South Africa, including Ciskei and Transkei, and the others from four bordering countries. If one assumes that the workers from other countries are not likely to know much Afrikaans, it supports the decision of GFTS to press for English as a medium of training and advancement.

Table 3: Mother tongue of learners

	Frequency	Percent
Other	1	1.4
Shangaan	2	2.8
Sesotho	26	36.1
Swazi	4	5.6
Tsonga	1	1.4
Tswana	7	9.7
Xhosa	25	34.7
Zulu	6	8.3
Did not answer	2	-
Total	**74**	**100.0**

Consistent with reported place of origin, the two largest mother-tongue language groups are Sesotho and Xhosa, making up over 70% of the sample. The other 30% are spread over seven languages as the mother tongue. No one reports English as a mother tongue.

Table 4: First additional language spoken in addition to the mother tongue

	Frequency	Percent
Afrikaans 1*	1	1.5
Afrikaans 2	1	1.5
English	5	7.4
English 1	9	13.2
English 2	7	10.3
Other	1	1.5
Portuguese	1	1.5
Shangaan	1	1.5
Sesotho	1	1.5
Sesotho 1	2	2.9
Sesotho 2	1	1.5
Swazi	1	1.5
Swazi	1	1.5
Tswana	3	4.4
Tswana 1	1	1.5
Tswana 2	9	13.2
Xhosa	2	2.9
Xhosa 1	4	5.9
Xhosa 2	3	4.4
Zulu	2	2.9
Zulu 1	7	10.3
Zulu 2	5	7.4
Did not answer	6	-
Total	**74**	**100.2**

Legend: *1 - Learner reports speaking it "a little."
2 - Learner reports speaking it "a lot."

Multilingualism among black Africans is a well-established fact, and this study bears it out. Of the 74 learners, 68 report a language spoken in addition to their mother tongue. About 1/3 report Afrikaans, Portuguese, or English as the first additional language, and the others report another black language.

Table 5: Second additional language spoken

	Frequency	Percent
Afrikaans 1*	1	2.2
Afrikaans 2	1	2.2
English 1	6	13.0
English 2	2	4.3
Sesotho	3	6.5
Sesotho 1	6	13.0
Sesotho 2	2	4.3
Swazi	3	6.5
Tswana	1	2.2
Xhosa	1	2.2
Xhosa 1	7	15.2
Xhosa 2	3	6.5
Zulu	5	10.9
Zulu 1	4	8.7
Zulu 2	1	2.2
Did not answer	28	-
Total	**74**	**99.9**

Legend: *1 - Learner reports speaking it "a little."
2 - Learner reports speaking it "a lot."

Forty-six learners, or 2/3 of the group, report a second additional language. Eleven report speaking Xhosa, 11 Sesotho, 10 Zulu, 8 English, 3 Swazi, 2 Afrikaans, and 1 Tswana. Nine say they know a lot of this second additional language, 24 say a little, 13 give no rating, and 28 did not answer, presumably having no second additional language.

Table 6: Third additional language spoken

	Frequency	Percent
Afrikaans	1	4.8
Afrikaans 1*	1	4.8
English	3	14.3
English 1	4	19.0
English 2	1	4.8
Sesotho 1	2	9.5
Tswana	2	9.5
Tswana 2	2	9.5
Venda 1	1	4.8
Zulu	1	4.8
Zulu 1	2	9.5
Zulu 2	1	4.8
Did not answer	53	-
Total	**74**	**100.1**

Legend: *1 - Learner reports speaking it "a little."
2 - Learner reports speaking it "a lot."

A third additional language is reported by 21 learners. The largest number here, 8, report knowing at least a little English, with 4 each for Tswana and Zulu, and the rest with Afrikaans, Sesotho, and Venda. Even though the number of languages claimed by a single learner becomes fewer as they are added on, still one can see that 21 out of 74 subjects in the study seem to know something of four languages. This is all the more remarkable when one sees later that half of the subjects in this study are at or below Standard 6 (the eighth year of schooling). While a second or even a third language may be taught at school, many learners have learned without formal teaching. This may show the power of need and practicality in the language learning process.

The fact of multilingualism should also work in favor of English language training. It is commonly held in the field of language teaching that the first additional language is the hardest to learn. Once the learner has figured out, even sub-consciously, how to go about learning a second language, he or she then has developed useful learning strategies which help acquisition of additional languages.

Table 7: Language read or written: First language reported

	Frequency	Percent
English	19	33.9
Portuguese	1	1.8
Sesotho	9	16.1
Swazi	1	3.6
Tonga	1	1.8
Tswana	9	16.1
Xhosa	9	16.1
Zulu	6	10.7
Did not answer	18	-
Total	**74**	**100.1**

About 3/4 of the sample reported being able either to read or to write in some language. About 1/3 of the learners who said they could read or write gave English as that language. While 56 responded, 63 had a LITNUM score indicating some knowledge of English. This fact may indicate that the learners do not quite do justice to themselves, some reporting less than they can really do. It also cautions one in the interpretation of self-report data. It is encouraging, however, to see that if there be error, it is on the conservative side.

Table 8: Language read or written: Second language reported

	Frequency	Percent
Afrikaans	6	18.8
English	13	40.6
Shangaan	1	3.1
Sesotho	5	15.6
Swazi	1	3.1
Tswana	1	3.1
Xhosa	2	6.3
Zulu	3	9.4
Did not answer	42	-
Total	**74**	**100.0**

Regarding another language that is read or written, English has over 40% of the responses, with Afrikaans about half that, followed by Sesotho, Zulu, Xhosa, Shangaan, Swazi, and Tswana.

Table 9: Language read or written: Third language reported

	Frequency	Percent
Afrikaans	1	10.0
English	1	10.0
Sesotho	2	20.0
Xhosa	4	40.0
Zulu	2	20.0
Did not answer	64	-
Total	**74**	**100.0**

Ten subjects report being able to read or write in a third language. As with oral language, this seems quite an achievement for learners with only a very basic education.

Table 10: Age of learners

	Frequency	Percent	Cumulative frequency	Cumulative percent
20 - 26	9	14.7	9	14.8
28	6	9.8	15	24.6
29	12	19.7	27	44.3
30	4	6.6	31	50.8
31	2	3.3	33	54.1
32	7	11.5	40	65.6
33	4	6.6	44	72.1
34	2	3.3	46	75.4
35	3	4.9	49	80.3
36	2	3.3	51	83.6
38	4	6.6	55	90.2
39 - 59	6	9.7	61	100.0
Did not answer	13	-	-	-

The age of this sample of learners as they report it ranges from 20 to 59 years, with the median age, or age in the middle of the range, as about 30. Half are between the ages of 29 and 34. As a group, the team leaders with some English ability are relatively young.

Table 11: Standard of school-leaving

	Frequency	Percent	Cumulative frequency	Cumulative percent
2	1	1.7	1	1.7
3	6	10.0	7	11.7
4	2	3.3	9	15.0
5	14	23.3	23	38.3
6	8	13.3	31	51.7
7	13	21.7	44	73.3
8	8	13.3	52	86.7
9	8	13.3	60	100.0
Did not answer	14	-	-	-
Total	**74**	**99.9**		

The median of education as reported by the workers is Standard 6. It could also mean that they were in Standard 6, having not yet completed it, when they left school. Some reached Standard 9 (the eleventh year of schooling), the highest reported. Most of these learners came from places where they probably received their schooling in their mother tongue. This makes the challenge of learning English all the greater, and all the more understandable as a study that one is beginning.

This table indicates that the team leaders in this study are basically a literate group. The usual definition of functional illiteracy is reaching only Standard 4 or below. Yet only 15% fall into this group.

Table 12: Years worked on the mines

	Frequency	Percent	Cumulative frequency	Cumulative percent	Decreasing percent
1	3	5.0	3	5.0	100.2
5	3	5.0	6	10.0	95.2
6	1	1.7	7	11.7	90.2
7	1	1.7	8	13.3	88.5
8	4	6.7	12	20.0	86.8
9	3	5.0	15	25.0	80.1
10	9	15.0	24	40.0	75.1
11	10	16.7	34	56.7	60.1
12	4	6.7	38	63.3	43.4
13	8	13.3	46	76.7	36.7
14	5	8.3	51	85.0	23.4
15	5	8.3	56	93.3	15.1
18	1	1.7	57	95.0	6.8
27	1	1.7	58	96.7	5.1
35	1	1.7	59	98.3	3.4
40	1	1.7	60	100.0	1.7
Did not answer	14	-	-	-	-
Total	**74**	**100.2**			

Of the 60 who reported years worked on the mines, the median time was 11 years. About half had 10-13 years of service, with only 4 having more than 15 years. By this point, both the workers and the company have invested quite a bit in each other.

3.4 ANALYSIS OF QUANTITATIVE DATA

3.4.1 Quantitative data tables and interpretation

The data are presented in the next four tables. Discussion and interpretation follow each table.

Table 13: Means and standard deviations on the pre-tests

Experimental Group (total n = 41)

	Anomalous Concept Test	Anomalous Figure Test	Series Induction Test	Industrial Test Battery Total
N of cases	21	21	21	22
Mean	16.9	17.4	18.1	52.8
Standard deviation	3.3	3.7	4.5	8.9

	English Vocabulary Balt B	English Usage Balt B	English Comprehension Balt B	English Total Balt B	Interview Score
N of cases	19	19	19	20	37
Mean	12.7	13.8	11.0	37.2	3.4
Standard deviation	5.4	5.1	4.9	14.1	1.1

Control Group (total n = 33)

	Anomalous Concept Test	Anomalous Figure Test	Series Induction Test	Industrial Test Battery Total
N of cases	24	24	24	24
Mean	16.2	16.1	16.8	49.1
Standard deviation	4.4	4.0	5.9	11.4

	English Vocabulary Balt B	English Usage Balt B	English Comprehension Balt B	English Total Balt B	Interview Score
N of cases	16	16	16	19	22
Mean	13.5	12.9	11.0	35.8	3.3
Standard deviation	5.0	4.5	5.4	12.9	1.0

DISCUSSION OF TABLE 13

In Table 13 the means and standard deviations on the pre-test are presented. These means and standard deviations are descriptive rather than analytical. One must look at the N of cases, or number of subjects for whom data are available. Some subjects had only partial data.

The tests presented are for one thinking test, the ITB, and for two language tests, the BALT B and the Interview Score, Carroll's bands. The means for the various measures of the experimental group were compared with the corresponding means for the various measures of the control group. The two corresponding means per measure were compared by the use of t-tests. No significant differences were expected, because these scores are pre-tests, and a study should begin with learners who are theoretically equal. No significant differences were found. This analysis paves the way for an effect to show up through the experimental treatment.

Table 13 and the following one, Table 14, summarize a great amount of data, and they bear appropriate study.

Table 14: Means and standard deviations of difference scores (Post-test score minus pre-test score for each test)

Control Group

	DACT	DAFT	DSIT	DITBTOT
N of cases	18	18	18	18
Mean	2.3	3.9	3.7	9.9
Standard deviation	3.3	3.7	4.4	8.6

	DENGVOC	DENGUS	DENGCOM	DENGTOT	DEORAL
N of cases	12	12	12	19	22
Mean	-0.0	1.0	-0.0	-1.1	0.9
Standard deviation	4.1	3.8	2.0	7.1	0.6

Experimental Group

	DACT	DAFT	DSIT	DITBTOT
N of cases	20	20	20	20
Mean	1.3	2.7	2.6	6.6
Standard devition	1.9	3.9	4.1	6.6

	DENGVOC	DENGUS	DENGCOM	DENGTOT	DEORAL
N of cases	13	13	13	20	31
Mean	-0.2	-2.4	-0.3	-1.4	1.1
Standard deviation	2.6	3.5	3.5	7.5	1.2

Legend: DACT - Mean of differences on the Anomalous Concept Test
DAFT - Mean of differences on the Anomalous Figure Test
DSIT - Mean of differences on the Series Induction Test
DITBTOT - Mean of differences on the Industrial Test Battery Total
DENGVOC - Mean of differences on the English Vocabulary Test, BALT B
DENGUS - Mean of differences on the English Usage Test, BALT B
DENGCOM - Mean of differences on the English Comprehension Test, BALT B
DENGTOT - Mean of differences on the English Total, BALT B
DEORAL - Mean of differences on the Oral Interview (Carroll's Bands)

DISCUSSION OF TABLE 14

Table 14 shows the means and standard deviations of the difference scores per group. In this table, the numbers of subjects are smaller than in the previous table, because a difference score can be derived from only those students who have both a pre-test score and a post-test score.

Post-Test Data

Having established that the groups were similar to start with, analysis was done on the difference scores. The t-test was used to test the mean of the difference scores for the control group against the mean of the difference scores for the experimental group. This was done for the ITB and its sub-tests, the BALT B and its sub-tests, and the Interview Scores (Carroll's bands). The differences do not reach the level of significance. Thus the quantitative data do not show an effect due to treatment.

There is a clear positive result seen in Table 14 in the DEORAL, or Difference on the Oral Interview Test (Carroll's bands). While experimental and control groups do not differ from each other significantly, they both have an increase of about one band, the experimental being higher than the control. This result is a quantified increase of one level of speaking skill per learner as a result of a three-week course. Inspection of the raw data confirms this increase, and it is analyzed and discussed further in Table 15 below.

On the ITB, all of the differences are positive, indicating that post-test scores were higher than pre-test scores. While not achieving statistical significance, the changes are in the expected direction. This result provides some evidence that thinking was better after the courses.

3.4.2 Discussion of quantitative results

It was hypothesized that statistically significant differences would be observed in this study. However, when the size of the various groups under comparison became so small, it was no longer reasonable to expect statistically significant differences to appear. It is generally accepted that a small number of subjects does not give the researcher enough opportunity to see differences. Statistical tests themselves are geared in general for large numbers of people. In this study, the number of subjects on the subtests was 12 and 13, really too small. It is confirming at least that nearly all of the tests show changes in the expected direction.

Research in the real world rarely proceeds perfectly, and several operational and methodological problems were encountered. It seems useful to examine them, because they could also have contributed to the specific results obtained in this study, and also as learnings that are important for future research of this type.

Operational

1 Some data could have been faulty. When one thinks of all the steps it has gone through, from ITB testing on the mines, hand scoring, recording in files, removing from files and recording on a paper, recording then on a data capturing sheet, and then entering into a computer, there are so many chances for human error. In fact, several errors were found, including some in which scores exceeded the possible range. One wonders how many others have occurred that were not obvious. It could take only one error to alter the means and difference scores significantly.

2 The tests perhaps were not fine enough to measure gains over a short period.

3 The tests may not be appropriate for measuring gains. Both the ITB and the BALT B were developed as selection and placement tests, not as proficiency tests. Yet their use in this study was to measure gains in proficiency in a pre-post setting. Some tests are capable of this dual task, but these tests may not be. They still may be tried in the future for these purposes, but only along with other more appropriate tests, and only with a much larger sample of learners.

4 Another indication that the BALT B was not functioning properly for whatever reasons is the fact that, for both control and experimental groups alike, the difference scores are negative. This means that the post-test scores were lower than the pre-test scores. A decrease, even though not at a level of significance, is hardly to be expected after three weeks of intensive training. This decrease, the only one in the study, contradicts the positive results on the Interview Score, and it contradicts the reports of all the learners and all the instructors. Thus it is reasonable to treat the BALT B as a proficiency measure with great skepticism.

Methodological

1 Four methodological problems have been observed, reasons that quantitative differences were not found. First, the same teachers taught both control and experimental groups. This was a necessary situation because there simply were no other language teachers, and because the study was the practical part of their training for certification. However, once a teacher has taught with the INTUS special approach, that teacher may well be different, seeing broader and deeper aspects of the teaching-learning process. How then can one teach and not utilize these intuitions? Results that are now coming out of other major research conducted in conjunction with INTUS, the UPTTRAIL project, support this explanation.

Actually, while one would like to establish quantitative significant differences, the fact that they did not appear might support the strength of the experimental approach. It is not something that can be turned on and off, but it becomes part of one's self as a teacher. If this is the case, it is indeed a good result.

2 The second methodological observation may be that, by their own report, the instructors were still not quite sure of themselves when utilizing the INTUS special approach. It could then be that the approach was not fully used, and thus that the treatment itself as implemented was diminished.

Both of these methodological aspects could have served to make the experimental and control treatment too much alike for valid comparison. In this case, no significant differences could be expected.

3 A third reason might have to do with treatment of the groups as it was described. The instructors used many aspects of the INTUS special approach when teaching the control groups. They used about the same posters, flash cards, dramatizations, games and teaching cards. While good teachers may use these techniques, to use the same ones may have worked against the study. It seems safe to say that it is not usual in L2 teaching to incorporate relaxation techniques or to play classical music, both of which the instructors did in the control groups.

4 The fact that none of the instructors had qualifications as a teacher of any second language, let alone the language taught in the study, probably affected the research negatively. They were expected to teach control groups by traditional

methods when they could not have really known traditional methods. Wanting to teach well, in a professional spirit, they drew on the only real training they had, in the INTUS special approach. This seems another reason that the difference between experimental and control treatments was greatly reduced.

Again the use of experimental techniques, if not the whole method, in control groups indicates the power of the method. It seems as if the instructors couldn't help but give their best to their students. It may be an impossible task for instructors to teach both control and experimental groups. It seems clear that instructors must not be put in this position again.

It can be noted that in another INTUS project at a language teaching institute, instructors did not want to teach control groups and students did not want to study in them. Instructors at GFTS were not enthusiastic about control group teaching, but they did as they were asked, in a spirit of co-operation. An important lesson has been learned here.

3.4.3 Analysis of interview scores

On inspection of the data, the interview score results seemed to increase for both experimental and control groups. Yet no significant increase showed in the totals. In fact, of the 52 learners who had both pre- and post- test scores, 39 went up, 3 were the same, and 10 went down. It was then discovered that for one control group, 7 out of 8 scores went down. This was a strange result, since most learners in the other groups showed an increase. The data was re-checked and indications were that it had not been mistakenly coded once received. Furthermore, most BALT B scores in this particular group went up, and the post-test average on the BALT B was higher than the pre-test average for that group.

One can only conclude that there was a problem with interview data in this group, and the safe decision was to disregard these scores. It is especially important to disregard this data because the error would be in favor of the experimental learners. That left an experimental group total of 31 and a control group total of 13 (one other control group had no scores). Table 15 shows the results.

Table 15: Analysis of interview scores (Carroll's Bands)

Number of Learners	Experimental Group (n=31)	Control Group (n=13)
Scores increased from pre- to post-test	26 Net gain: 35.5 average gain: 1.36 (35.5/26)	13 Net gain: 14 average gain: 1.08 (14/13)
Decreased	3	0
Same	2	1

Table 15 shows an increase of about one band per learner. The experimental and the control groups both clearly show a benefit to learners of receiving classes in English. Furthermore, the gains in the experimental group are numerically higher than those in the control groups.

T tests were carried out to determine whether these gains were statistically significant. The increase in both groups was statistically significant, with $t = 4.91$, p less than .001, $df = 30$ for the experimental group, and $t = 6.80$, p less than .001, $df = 13$ for the control group. The difference in gains between experimental and control groups was not statistically significant, with $t = 1.02$, $p = .40$, $df = 40$. However, the experimental group gained numerically more on average than the control group, in the expected direction.

3.4.4 Correlation of results

Table 16: Correlations between selected measures (Pearson correlations)

	EPPI	PREORAL	POEORAL	PRITBTOT	POITBTOT	PRENGTOT
PREORAL	-03.069					
PREORAL BP	1.0000					
POEORAL	-0.3105	0.8156*				
POEORAL BP	1.0000	0.0001				
PRITBTOT	-0.1761	0.5728	0.5050			
PRITBTOT BP	1.0000	0.1121	0.3468			
POITBTOT	-0.1824	0.5143	0.5178	0.6975*		
POITBTOT BP	1.0000	0.3012	0.2852	0.0065		
PRENGTOT	-0.0027	0.6335*	0.6160*	0.3885	0.3926	
PRENGTOT BP	1.0000	0.0325	0.0477	1.0000	1.0000	
POENGTOT	-0.0272	0.6553*	0.6473*	0.4815	0.6130*	0.8697*
POENGTOT BP	1.0000	0.0196	0.0237	0.4890	0.0508	0.0000

***Significant at 5% level**

Number of observations: 22

A variable name followed by the symbols BP denotes the Bonferroni probability of the significance testing of the null-hypothesis that the correlation is zero. If any of these is less than 0,05 then its corresponding correlation is declared significant at the 5% level.

Legend: EPPI - English Proficiency Placement Interview
PREORAL - Pre-test Interview Scores (Carroll's Bands)
POEORAL - Post-test Interview Scores (Carroll's Bands)
PRITBTOT - Pre-test Scores on the Industrial test Battery, Total Score
POITBTOT - Post-test Scores on the Industrial Test Battery, Total Score
PRENGTOT - Pre-test Scores on the BALT B, Total
POENGTOT - Post-test Scores on the BALT B, Total

DISCUSSION OF TABLE 16

1 The EPPI does not correlate with the ITB, the oral English test or the written English test as mentioned earlier. Problems with its early implementation may account at least partially for this fact.

2 The Interview Score (Carroll's bands) correlates with itself as a pre- and post-test, which indicates consistency of the test.

3 At every opportunity, that is, as pre- and post-tests, the Interview Scores (Carroll's bands) correlate with the BALT B total score, also both as pre-tests and as post-tests. This is a very important cross-validation of both measures. Furthermore, the correlation is substantial, ranging from .62 to .66 over the 4 cases.

It indicates to some extent that the scores on both tests vary in the same way. Thus if one has the BALT B score, which is a written score, one can probably expect some degree of relationship to an oral score. As was pointed out earlier, this written-oral relationship is not to be assumed and it must further be pointed out that it still cannot be guaranteed. However, this relationship that exists on these tests with these learners is helpful as placement information.

4 There is a significant correlation of .61 for the post-test scores on the BALT B total and the ITB total. The pre-test scores on these measures do not correlate significantly. The significant correlation here says something about the connection between language as measured by the BALT B and thinking as measured nonverbally by the ITB. It does not imply causality, that one causes the effect in the other. It only shows a connection beyond chance, and that connection is one that was suspected and now is supported. It can be seen as supportive of the combination in instruction of language and thinking. This seems true especially because the relationship did not appear in the pre-tests before instruction, but only after the instruction process, which included English and thinking skills, had taken place. This relationship bears further study.

3.5 ANALYSIS OF QUALITATIVE DATA

3.5.1 RESULTS AND DISCUSSION OF LEARNER QUESTIONNAIRES:

Twenty-five questionnaires were returned from three of the four experimental groups. Sixteen questionnaires were returned from three of the four control groups. The 25 were analyzed as a whole, and the 16 were analyzed as a whole. Results were then compared.

The learners did not always answer the question, but often wrote whatever they had to say, relevant or not. All comments were considered important and were included in some way. The very fact that a response was written down by at least one learner indicates that the idea was in the group, and chances are good that this one learner speaks for at least some others. One gets the impression that learners worked hard to express themselves. Interpretation of poor handwriting and imperfect English were difficulties, but the message usually came through. Some questionnaires were only partially completed.

Results are given for each question, summarized per group. Discussion follows.

EXPERIMENTAL GROUP

1 What did you like best about this course?

The most frequent response was learning English; nearly all mentioned it, some noting speaking, one noting reading and writing. One learner commented, "It has accelerated my ability to speak English."

There were several comments on the method: "The teaching system is very good," the course "taught me how to remember," the "easy way of understanding," and the action in the class was noted, along with singing, music, and teaching.

Some liked best the thinking skills: "to think hard about everything," "to improve my English thinking skill." They liked and respected the teachers, and thought they were "very good." The course broadened their minds "with things I have never met before." The story of Henry gave "different ideas how to look for work." They liked the idea they had that they would be promoted because of the course, with better salary. Affective observations came out: one said he "feel(s) free to become better," another liked that the course "put White and Black together."

2 What didn't you like about this course?

Many learners wrote there was nothing they didn't like. One felt everything was "right and good." Placement came up as an issue, with several disliking "being with guys who already knew English." A few other comments, such as there was not enough time, and a certain test and story were too long. There were observations on racial matters: "Whites don't like to be with us at meals," and "the White men are not so happy."

A few ideas not related to the course were expressed: The bus driver was rude; one disliked his heavy and dangerous job; others mentioned having to go back to life in the compound.

3 Is there anything you want to ask?

Several learners wondered what it would be like on return to the compound, some more specifically about the points of view of supervisor, shift boss, and miner. Is there promotion, and if not, why not? Where can they get the results of the course, why three weeks for English, can they learn more English? "Why don't you take many people to come learn English?" "Why does the mine bring us to this course?"

4 Do you feel that you are in any way different now than before you took this course? If so, different in what way? Toward yourself, and if so, how? Toward others, and if so, how?

All except one said yes. Most put the difference in terms of English: "I can speak better," and one learner made this classic statement: "My English have improved." One has more knowledge, one remembers what he learned at school, one learned more things about himself. Two expected promotion because of the course, one adding that, because of English and promotion, "They will be afraid of me" (unclear to whom "they" refers).

Three described the difference relative to others: "can now explain, communicate with others, feel advantaged over others." Two said they felt better after the course, and one, "I feel right 100%." One noted a self-confidence effect; he had been ashamed to speak English before, but now "I can talk to anybody I meet."

5 What were the main things you learned on this course? Give as many things as possible.

Several learners noted thinking skills, mentioning PNI, OPV, and FIP; also how to observe and how to solve problems. One learned to think before doing anything, "look before you leap." Most said they learned English speaking, reading, and writing, and some also noted spelling and the meaning of words. They noted course content, such as sayings, tenses, days

of the week, parts of the body, colours, money things, how to eat at the mess and in restaurants, how to apply for jobs. They learned to enjoy stories and "soft music." There were several comments on safety, specifically fire and accident prevention. One noted, "to see how gold is made." One was philosophical: "facing the future."

6 Have you used anything you learned on this course in your work, or in your life in general? If so, what?

Yes, some used a little more English, a few used thinking skills, mentioning using PNI and CAF "as possible." One learner said he used one of the sayings from class with a friend who wanted to change to JCI mines, telling him, "The grass is always greener on the other side of the fence." A few said they had not used anything. They mentioned things they intended to use, one such comment being also a comment on motivation: "I want to go help other people at work and teach them English and other things I know." "I shall speak English with my superiors." One said he used this language after work "and I want to know it." Another tries (will try?) to speak English with his friend at the compound. They mentioned safety, methane gas, accident and loss prevention, fires (situations used for the teaching and testing of thinking). One noted "how to respect others." One even answered: "how to make love to a girl I love" (not part of the syllabus!).

(While some language and thinking-skill use was expected to be reported, opportunites for spontaneous use out of class were few while they were still on the course and away from their jobs).

7 Please give us a comment or thought, or anything you would like to say.

They expressed their thanks to GFTS (Gold Fields Training Services) for English, for knowledge, and for thoughts. They thank their teachers: "Next time I'll give you a gift." One wanted to extend the course to others: "Teach everyone, help us all." Another asked for three months for learning English. One noted the environment: "This course puts blacks and whites together to do one thing, one job." One writes, "I would like to thank GFTS for showing our bosses that they have to treat us properly."

Safety came up again: "I'm going to influence my friends to use safety and good housekeeping." One asks, "Why am I sleeping so nicely and eating nice food that I will never get on the mine or compound?"

Motivation: "In this course I have improved and I want to improve again." One says, "I am very pleased with this course," another says simply, "I'm very glad."

8 Do you feel that you can think better? If so, a lot or a little? In what ways?

All responses were yes, some adding "a lot," "before starting a job," and some noted PNI, CAF, and C & S. One said he learned new things, another said that the course made him think of things he had forgotten. The results of positive thinking can be seen in the learner who said that now, if he wants the job, he may get it. One will think even better if he can come to the course again. Two looked ahead: one, how to teach his children, the other, what he could do to get a better future.

9 Was this course easy or hard?

Fourteen said easy and nine, hard, "but I am interested," one added.

10 Was the course too long/too short/just right?

Most felt it was too short (16), three said "just right," two, "too long." Ones who thought it was long also thought it was hard.

11 Two learners each offered extended comments, which are given here in full. (Both are edited slightly for grammar.)

Learner 1: "The music is very good especially to remember the story of Henry and what I can do if I want to hear nicely (listen to good music). What do our bosses think about communication and about our future? What steps do they take if there is a boss who doesn't like other black people to get a promotion? In future, will there be black people who will teach as shift bosses, M. O., and managers? Will their salaries be the same as now?"

Learner 2: "I think GFTS has to see to it that there is a course for our bosses, to teach them how to work properly with their workers. They have to be friendly, kind, and attentive to their workers. They have to respect them, so to achieve respect themselves. They have to communicate easily and friendly (sic). If this can happen there will be more production and fewer accidents. They must look into the future."

CONTROL GROUP

1 What did you like best about this course?

They liked best the fact of learning English, noted by six learners. Also mentioned were the books, the story of Mr. Lourens (it "captured my soul," said one), the tapes, the teacher who helped them "write, read, and understand English." One said, "The course will help me

to have a job and money." One felt it "encourages me to be not frightened in job seeking." They liked the quarters, the food, and the "VIP treatment." One liked to be treated "not different" because of being black. Several wanted an advanced course.

2 What didn't you like about this course?

There seemed to be little they did not like; positive statements continued. One wrote, "I can stand proudly against anyone who can argue that there is something wrong with the course. I enjoyed every minute of this course." A frustration was voiced: "This course leads a student to the bright place. When the student started to follow the light of GFTS, it just put off." This seems also a request for more consistent educational opportunities. One felt the story of Mr. Lourens was too difficult.

3 Is there anything you want to ask?

They questioned where they would go from there. One asked what standard work they were doing.

4 Do you feel that you are in any way different now than before you took this course? If so, different in what way? Toward yourself, and if so, how? Toward others, and if so, how?

All said yes, they felt different after taking this course (one said, "A big YES"). Many put the difference in terms of English learned, such as: "Toward myself...is so different" in that he knew a little about speaking English and writing it down. One reported increased motivation: "Before I took this course I spoke Setswana, now I try to speak English." Two comments seem to reflect improved self-image:

"I know how to respect myself while I am with other people of different places."

Because of learning, "I can't be afraid of what I want, what I think, what I have done, which is the best way to use it, etc."

5 What were the main things you learned on this course? Give as many things as possible.

The main things learned include: speaking, reading, and writing in English; discipline; cleanliness; to give introductions; to shake hands; English tense differences; to use a telephone; manners; accident prevention; words for food; how to work with communication. "Almost everything a student is taught for a full year at school."

6 Have you used anything you learned on this course in your work, or in your life in general? If so, what?

No response said yes, but the tone is captured by this statement: "Not yet, but I am expecting the best results." They noted where they might use what they learned, such as sending a telegram, writing a job report, introducing self to others. Values were expressed: "To be honest and productive in work." One learner noted, "Communication to work together with your team is handy."

7 Please give us a comment or thought, or anything you would like to say.

Several felt the course is good and should be extended to others. "May you continue with your syllabus." One mentioned that he liked the other students. One liked the teacher because she reviews and quizzes the students. One said the course "gave me an idea how to write an accident statement." One said, "I can say forward G.F.T.S. do not let the Black nation down." One offered congratulations to his teachers, and thanks to G.F.T.S. were expressed. One noted how things are run "under law and good hygiene."

8 Do you feel that you can think better? If so, a lot or a little? In what ways?

Most said yes, two added "a lot." One said no. One said, "I feel better now - understand more words."

9 Was this course easy or hard?

One thought it was hard, but the others felt it was either not too hard or easy. Three said it was "too easy."

10 Was the course too long/too short/just right?

Most thought it was short, "short because I enjoyed it," and "short for some who did not have much vocabulary "and who did not think quickly."

DISCUSSION

THE LEARNERS AS A WHOLE: BOTH EXPERIMENTAL AND CONTROL GROUPS

In general, the learners in both experimental and control groups were very positive about their three-week experience. They all liked learning English and want more of it. They liked their teachers and the conditions both in class and in their accommodations. They expressed appreciation to their teachers and to Gold Fields (GF). Loyalty to GF is evident,

with one proudly defending his English course, another persuading a friend to stay at GF, and one making suggestions for greater productivity. They felt they could think better as a result of either course; they seem to have been stimulated and broadened, encouraged to somehow become better. They are definitely ambitious, looking for what will come next, hoping for promotion, wanting a better salary and a better future. While they have a strong motivation to learn, they do not seem to know what steps they can take to better themselves.

The motivational effects of simply learning can be seen in their feedback. They seem to feel better about themselves only by taking a course, by applying themselves, by expanding their skills. Their attitudes, confidence, and self-image seem to have improved. One suspects that being so well treated also contributed to improved self-image.

One is struck by their feelings of community, with the "Black nation," with GF, with their children and the future, and with others, to whom they want to extend the benefits of the course. There seems to be a very democratic spirit. They seem to be studying black-white contact, perhaps with an eye to a non-racial future. They express the need for more feedback on their progress.

EXPERIMENTAL GROUP VS CONTROL GROUP

Many of the results here were unexpected. For example, self-image was expected to improve in the experimental group, and it seemed to, but it also seemed to improve in the control group. The experimental group was expected to be more positive, but they were both quite positive. More vitality in the experimental group was not expected, but there is strong evidence of it.

From the responses on the learner questionnaires, one gets an overall image of the control group as appreciative of an educational experience in English. With small groups and good teachers, they feel things are fine, similar to though greatly improved over a regular school experience. They accept the course gratefully and want more. They are uncritical, nicely co-operative, almost passive.

A different picture of the experimental group emerges. One can imagine it to be a spirited horse lively and eager in its traces. These learners asked more, and more difficult, questions: why, where, what would happen IF. They make suggestions for improvements of their working conditions. They seemed to respond to the questions with more elaborate answers, giving support to what they say. In short, they seemed to be thinking. There is

energy in what they say; they seem to have been reached. They tended to answer the questions more directly than the control group. They also gave more negatives. One gets the feeling that they reach into themselves and give more, and also that they will be harder to control, not an unusual consequence of thinking. There is a dimension in this group that is missing in the control group. Since the groups differed only in method of instruction, it is not unreasonable to attribute the difference in large part to the method.

The experimental group responses included several comments on the method, all spontaneous and all positive. To the control group, method seemed invisible, expected as part of a class.

The experimental group expressed unhappiness and even frustration with placement. They did not like being in a group where others knew much more English, and felt sorry for those who struggled a lot. The control group says nothing about placement.

3.5.2 RESULTS AND DISCUSSION OF QUESTIONNAIRE FOR INSTRUCTORS

The questionnaire for instructors was filled out after all except one group. Results are tabulated by question for the experimental and then for the control group. The discussion follows.

EXPERIMENTAL GROUP

1 The things you liked best about conducting this course were:

The students had a better standard of education. They were very enthusiastic. The course plan was much better. The visit to the plant was a highlight, and it really meant something to the students. One instructor stated liking for the thinking skills. It was encouraging when the students got the right answers despite being "word-less".

2 The things you didn't like about conducting this course were:

The hours were long and draining. The three weeks dragged. To keep others motivated was draining. One of the instructors didn't like the crude advances made to her by some of the students. The text could be more interesting.

3 Do you have any questions, on course material, method of teaching?

How can the students do PNI or any of the tools at the start of the course when they can barely say a word? One instructor felt that she was still a bit uncomfortable with thinking skills.

4 Do you feel you are any way different now than before you taught this kind of course? (if so how?)

- **Towards self:** The majority didn't feel different, but one instructor felt grouchy, tired and drained.

- **Towards others:** The majority didn't feel different, but some felt more impatient and even less caring/concerned than before.

5 As you see things, the learners responded to this course in the following ways:

They responded very positively. They were very interested and willing to take part and work hard. They were motivated and eager to learn. They all appeared to enjoy the course. Some students remained uncommunicative.

6 Do you feel that your learners' language skills improved during this course?

Yes. Their self-confidence in the language improved very much. Most could speak better, although one or two students improved mainly on understanding rather than speaking. They made an effort to use new words and commented that they will know how to behave in various situations.

7 Their thinking skills?

Students definitely improved their thinking skills, and enjoyed the thinking skills sessions. They were more proficient as soon as they knew how to look and what to look for in the exercises. They certainly got more inquisitive and critical. One group was not as quick as the other groups, and the instructor got the impression that the group was "parrot" learning although they commented that they will use/are using what they learned.

8 Their attitudes?

Instructors felt that student attitudes were very positive. One stated, including emphasis, "ALL are much more confident when using the language." One group's attitudes were very anti-white, and they felt discriminated against and unfairly treated, but later they changed a bit. As students they were very positive.

9 Their self-image?

At the start of the course they were shy and their self-image was low, and at the end, forward and out-going. They were not used to the fine way they were treated on the course. They gained confidence and felt very special at the end of the course. All instructors felt that students' confidence improved during the course.

10 Would you just say a few other words, anything

One instructor felt that she enjoyed the training although it drained her. She realized that the course depended a lot on the instructor. When she had a bad day, the students realized it. Another instructor felt that she was losing her ability to speak Xhosa and Sotho because of Fanagalo. Another instructor found that some of her students misread their friendliness and made comments about what they could do to get a white girlfriend. She felt that she didn't have a problem with that but she could have had one. Another instructor didn't like teaching these students. She said "My milk of human kindness is beginning to curdle and my professional enthusiasm is running dangerously low".

The students liked the classrooms and the text/music very much. They were concerned about their future. They thought that they were on a course for a "Blasting Ticket". They wanted to know if they were going to get a promotion. Were they going to be certificated? How would they be accepted by their bosses and fellow workers?

One instructor stated that the group was extremely confident and "appeared quite comfortable with the method right from the beginning."

CONTROL GROUP

1 The things you liked best about conducting this course were:

One mentioned the signs of insight and improvement that the students showed. Some intelligent students asked questions. All were keen to learn. The instructor felt easy with the worked-out programme. The conventional learning method was not so stressful. The organized content was easier to prepare. In this course the attention was a bit away from the instructor. The instructors enjoyed the course, and one liked the change from suggesto (suggestopedic method).

2 The things you didn't like about conducting this course were:

Some instructors had difficulty trying to get through to a student because they could not speak Fanagalo or a black language. One instructor didn't like the CARW part. Some instructors were put off by the forwardness of some of the students. Some found the course boring for the instructor. Materials were often far removed from the students' background.

3 Do you have any questions, on course material, method of teaching?

One instructor wondered how the same students would react to suggesto after this course. One remarked that after this conventional method it was much easier to have "negative suggestions" to the suggesto course.

4 Do you feel you are any way different now than before you taught this kind of course? (if so, how?)

- **Towards self:** Almost everyone felt tired and drained, yet a bit pleased. One said she lost her suggesto and was scared to present the Afrikaans suggesto, yet looking forward.

- **Towards others:** They felt irritated and a little bit defensive.

5 As you see things, the learner responded to this course in the following ways:

Some felt the students were bored and frustrated. One instructor felt that they responded very, very slowly, yet another felt that they showed some enjoyment and interest. Some even did homework by themselves. It was easier to follow the course, and there were not so much individual tension. The students weren't expected to be creative.

6 Do you feel that your learners' language skills improved during this course?

Most instructors felt that reading and writing skills improved more than their oral ability. They became aware of mistakes and corrected them, and widened their vocabulary and grammar skills. One remarked that their confidence improved, but was not sure if their language skills did.

7 Their thinking skills:

The majority felt there was no improvement in thinking skills, though one remarked that there was some improvement. They developed more knowledge about the world and people - therefore they developed more structured, logical, open-minded thinking, more creativity, and more ideas and imagination.

8 Their attitudes:

One felt there was no difference, not even self-confidence, while others felt they reacted very positively. They were more open and confident and more aware of the value of English as method of self-improvement.

9 Their self-image:

Some felt there were no changes at all, while others felt there was a slight improvement, in that they were more confident.

10 Would you just say a few other words, anything:

One felt that this was a slightly better course than the others, it was definitely easier than suggesto. It is less tiring to present than the suggesto course. The laid-out programme worked very well. The shorter sessions were much easier on the instructor. Beacause the training method was much more formal, the students expected some homework. One remarked that the students seemed to realize that the course was not properly prepared or co-ordinated. Some instructors felt distanced from the students, and they didn't get to know them at all. One could see a difference in the students when they played a game or two. They enjoyed the communication sessions more (eg role play, etc). Some students felt safer in the writing sessions. One instructor remarked that the students didn't enjoy the course.

DISCUSSION

There were several responses common to both experimental and control groups. In general students were enthusiastic and more confident. The instructors were thoughtfully critical of course material, always trying to make it better. This is the mark of good professionals. Instructors are still developing ease with the method and with thinking skills.

There were several differences. In general instructors seemed to feel it was easier to present the control than the experimental course, in that not so much was demanded of the teacher, but then it could be boring and at times they felt not so close to the students as in the experimental method.

Instructors did not feel so different after either course, a bit tired and negative, but much more negative after control courses.

Some instructors liked the change from one type of course to another, which indicates that a break from one set way might be catered for. However, some people in general do not like to change so much, and this should be at the option of instructors rather than imposed.

There were differences in instructor reports of student response. In the experimental group, students were enthusiastic with just a few remaining uncommunicative. In the

control groups, the tone was more negative than positive, and less was demanded of the students and less received.

Instructors generally felt that the language improved. The experimental instructors were sure that student oral skills were better, while the control instructors were not so sure, though they thought reading and writing may have improved.

Instructors felt that thinking skills in the experimental groups very definitely improved. In the control groups, one group improved in general.

Attitudes in the experimental group were reported as very positive; for controls, some positive, others no difference.

Improvement on self-image was reported high for experimentals, but slight or no change in controls.

One cannot help getting the impression that the experimental groups were generally lively, positive, and colourful, while the control groups were generally fine, plodding along. There seemed to be an important dimension present in the experimental groups that was missing or at least greatly reduced in the controls.

Such a dimension is very difficult to quantify, yet it is what distinguishes excellent teaching. The teacher must reach the students deeply, must invite their response and value it on many levels, and motivate them to go further on their own. No method can guarantee this kind of teaching, and it can be developed without this method, but it seems that the experimental approach creates the climate that is necessary for it and makes it easier. In traditional teaching, factors that could be used remain neutral, and such excellent teaching is not so likely to happen. The present study bears this out.

3.5.3 RESULTS AND DISCUSSION OF INSTRUCTOR LOGS

The logs were completed by the instructors daily in the first two experimental courses and the first two control courses. Some items were left blank.

EXPERIMENTAL GROUP

Teacher:	**Good**	**Average**	**Bad**
Texts	14	19	1
Supporting materials	16	17	2
Audio-visual materials	10	2	3
Activations/exercises	21	9	1

Student Response (as perceived by instructor):

Texts	14	21	1
Supporting materials	19	17	2
Audio-visual materials	12	9	0
Activations/exercises	24	12	1
Thinking Skills	14	7	0

Overall Evaluation of the Day:

Inspiring	**Good**	**Average**	**Bad**	**Uninspiring**
0	17	20	1	0

1 Basic Text:

The reaction to the text was positive, ranging from average to good. The chapters were interesting yet sometimes boring and too long. The students enjoyed the story-line and role-playing of characters but asked a lot of vocabulary questions. There were many words they didn't understand, and they took a long time to decode the text. They refused to use the Fanagalo translation in the beginning because they felt they were there to learn English. Later they understood why they had to use this translation.

2 Supporting Materials:

The reaction to the supporting materials was positive, ranging from average to good. The music and the use of the language laboratory was very effective. They also sent telegrams to each other and read English magazines. This was also effective. The instructors felt that the peripherals, posters and flipcharts could have been more text-related. They also needed more vocabulary cards.

3 Activations/Exercises:

The reaction to the audio-visual materials was good. They watched videos like "Vimba the Miner", "South Africa" and "Gold". They really enjoyed "Vimba the Miner" because it was easy to relate to, with familiar scenes and faces. The video of "Benson" was a bit too advanced for them.

The reaction to the activations was very good. The students enjoyed the games and the competition with the other class. They were at first surprised at playing games in class but all participated freely. The students enjoyed the ball games and role-playing. They also found clapping with the music very interesting.

4 Thinking Skills

The thinking skills that were taught were FIP (First Important Priorities), CAF (Consider All Factors), PNI (Positive-Negative-Interesting), C&S (Consequences & Sequels) and OPV (Other People's Views). The students found the OPV and C&S a bit difficult and some could not cope with them. The classification and observation exercises were understandable. They also had very interesting politically orientated discussions. The students also gave one instructor a problem to solve and commented that she should use PNI. They seemed to realize that they should use the tools although they were not sure where to use them. One instructor wrote:

"The class had problems following a 'reasoning strategy' in all the problems, and they did mostly guesswork. However, something must have clicked somehow because later on they did remarkably good guesswork. They continually made unnecessary errors like counting wrong or getting clockwise and counter-clockwise motions confused. The most surprising thing was how easy they found the lessons on hypothesis testing, which I thought they'd never manage since it was so abstract. The only thinking tool they could not cope with was OPV since they had difficulty comprehending the backwards logic. It became clear to me at least that their success in solving problems depends on their level of westernization/sophistication. In a couple of people, I noticed a problem in perceiving

perspective and seeing parts in the whole - they simply could not do the tangrams or figure out the composition of the groups and sequences."

5 Anecdotes from students:

The students wanted to stay longer than three weeks. They were very interested in South Africa as a country. They made comments on the black and white issues in South Africa. They were also interested in the white culture, marriages, etc. Some got a bit bored towards the end of the course. They also tended to compete against each other.

6 Instructors' general remarks:

The instructors enjoyed teaching the course. The students participated freely and were motivated to learn English. One instructor was surprised that the students felt so strongly discriminated against. One instructor said that "the course took a lot out of a person and towards the end of the course everybody was tired and the groups grew a bit static."

Another commented: "Handling this group was a nightmare due to their attitude and level of educational qualification which I felt was extraordinarily low. They just lacked confidence in themselves. They hardly participated in class activities. We, instructors, did everything we possibly could to change their attitude and build up a positive self-image. In my opinion our message did come accross to them because during the second week of the course some of them got actively involved in some of the class activities. The post-test results are also testimony to this. In conclusion, I would say the course was a success."

CONTROL GROUP

Teacher:	**Good**	**Average**	**Bad**
Basic materials	14	25	1
Supporting materials	4	30	2
Activations/exercises	20	20	0

Student Response (as perceived by instructor):

Basic materials	13	24	2
Supporting materials	5	27	2
Activations/exercises	18	19	0

Overall Evaluation of the Day:

Inspiring	Good	Average	Bad	Uninspiring
1	9	28	0	0

1 Basic Materials:

The basic materials were seen as average to good. The CARW was seen as a bit too basic for some of the students, while quite exhausting for those who could not write at all. Later on they got more interested, but still saw the work as a bit boring. They reacted much more positively when they could relate to the work. The syllabus offered something for low and for more advanced learners.

2 Supporting Materials:

The supporting materials were seen as strongly average, with some rated good. The SEB was seen as difficult for the students as well as a bit tiresome. It was difficult for them to relate to the foreign British text. Their enthusiasm ran a bit low because they could not relate to things like yachting, visits to restaurants, etc. The supporting materials were too far removed from the experience of some, yet others liked it and their knowledge increased. The sound quality of the tapes was good, and this pronunciation model was helpful. They showed much more interest in things relevant to them, like how to prevent accidents.

3 Activations/Exercises:

The students responded much more positively when they practised their language skills actively. They enjoyed those things related to them much more. They found things like "rope and knots," about sailing, very boring. They enjoyed the role-play and games, and tried to speak English to each other. They learned faster when they were role-playing, or otherwise being active.

4 Anecdotes from students:

At the beginning they were not well motivated for the course. They doubted if they would ever be able to speak English, although they knew they would benefit from it. The work was mostly above their education level. Again, some felt that the work was too basic, that they needed something challenging. They found the method of teaching uninteresting and demotivating. They wanted to learn more job-related English. They could understand

English, although they could not speak it. Some of them hoped the course would lead to promotion.

5 Instructor's general remarks:

"Some students had no self-confidence. There was a general lack of motivation and interest. Some classes were not easy to handle, because they were a heterogeneous group. Because of that their pace varied. Later on they tried very hard to say something in English. They started speaking English to each other. Their enthusiasm grew during the course. They became more confident to speak English. They participated actively in class."

"This course is not as tiring to present as suggestopedia. Less personal input is needed. Students keep own identities, which makes it easier to communicate."

One group of 5 students was very slow in working with less English than the previous group. It took 1½ hours to read 5 pages of English dialogue. I don't think their English improved very much.

One group made their own notes, unlike other groups. They talked unusually much in the role plays.

DISCUSSION

Comparison will now be made between experimental and control group responses.

The teachers seemed to think the experimental materials were slightly better than the control materials. This is especially true of the supporting materials, and of the activations/exercises, even though it was reported that the same ones were used for both experimental and control treatments. Perhaps the context of the treatment, that is, the experimental approach, made a difference in the way the exercises were experienced. If so, then the approach is successful, as one of the things that it does is to set an overall positive climate.

The student response was very similar to that of the teachers. One cannot escape this if one asks for teacher perceptions, so it is not surprising. The students were seen to respond positively to thinking skills, most good and some average. One might infer that their response reflected that of the teachers.

In overall evaluations of the day, both groups had an average-to-good response. For the experimental group, however, the ratings were closely divided, and in the control group, only one-fourth of the days were rated good and three-fourths, average. Given that the same teachers were teaching both ways, they seemed to find the experimental approach much better than the control approach. This is an important finding.

In both experimental and control, learners in general moved from being difficult in the beginning to being active and successful. Overall, however, the evidence is clear that, with the possible exception of the text, the learners preferred the experimental materials and exercises to those in the control group. They liked learning English, but the experimental way is better appreciated and got more of a positive response from learners and students alike.

3.5.4 CHECKLIST FOR SUPERVISORS

The language instructors wanted to have more feedback on their courses, and they created a Checklist for Supervisors. Consequently the checklist was sent to supervisors of the team leaders they had taught in the course. Of the 74 students who had come onto the courses during the six months of the study, checklists for 13 students were returned. Four questions were relevant to the present study. Results and discussion follow.

1 **How would you rate the person's language skills after having completed the English course, in comparison to his previous skills?**

Improved: 9

Worsened: 1

Same: 3

2 **Have this person's reading/writing skills improved?**

Improved: 9

Worsened: 0

Same: 2

3 If possible, comment on this person's general appearance, manners, attitude, and/or thinking skills now, as compared to before the course.

Improved (Greatly, a little, somewhat): 5

More confident: 1

More positive: 1

No change apparent: 2

Comprehension weak: 3

4 Would you say the course has in any way at all been of benefit to you or the student in your work situation?

Yes: 10

No: 1

DISCUSSION OF SUPERVISOR RESPONSES

The supervisors felt in general that the learners had improved in oral and written English. There is still room for more improvement, which is expected because the learners were at the intermediate level. Two comments refer to an improvement in self-image and attitude. This feedback is encouraging because a major purpose of training is to improve the team leaders' performance on the job, and this goal seems to have been well accomplished.

4 CONCLUSIONS AND RECOMMENDATIONS

The central question in this study concerns how English can best be taught on the mines. Specifically, can black workers with low educational levels learn an appreciable amount of English in a three-week intensive course? Does the INTUS special approach yield greater gains in English, in ability to think, and in attitude (affective matters) than traditional classroom methods? Selection of learners, placement in courses, and the connection between language and thinking were also observed in a secondary way.

A study was done over a six-month period, with four experimental and four control groups, which at the end were merged into one experimental group and one control group. With most training factors held constant, the experimental group was taught using the INTUS

special approach, and the control group was taught using traditional methods. Pre-test and post-test measures were used for English language skills and for thinking skills. Qualitative data was gathered from students, instructors, and supervisors. Results were analyzed and conclusions are presented in this chapter.

4.1 APPRECIABLE AMOUNT OF ENGLISH LEARNED

The answer to the question whether black workers with low educational levels can learn an appreciable amount of English in a three-week intensive course is a clear YES. The results in general support that they can. The learner questionnaires, instructor questionnaires, instructor logs, and supervisor checklist responses were nearly 100% positive about this. The Carroll interview results, scored objectively by outside scorers, demonstrate quantitatively that learners went up a band, or a level, after this English training. This is a good finding, especially when even professionals in the field of language testing find it very difficult to quantify gains over a three-week period. Obviously gains are being made at GFTS.

Most of the teaching was for oral language proficiency at a low intermediate level, and it seems to have been quite effective in developing skill in listening and speaking English. While less instructional time was spent in developing reading and writing, the attempt was still made to measure written language through the BALT B. No significant differences were found, and use of the test is suspect.

4.2 HYPOTHESES AND RESULTS

Several hypotheses were stated in Section 1.3 regarding these questions. It was hypothesized that experimental groups would make greater gains than control groups regarding English language skill, thinking skill, and attitude. The hypotheses are examined in light of the results and conclusions are drawn.

4.2.1 ENGLISH LANGUAGE SKILLS

English language skill improved for both experimental and control groups, as measured by four out of five measures. The oral test, the questionnaire reports of learners, the questionnaire reports of instructors, and the checklist of supervisors all show gains in English. Statistical tests on the oral measure did not show a level of significance; however, a gain of one band can be considered meaningful. The experimental group had a higher average net gain on the oral measure than the control group.

On one measure, the BALT B, results were negative rather than positive for both groups. As discussed earlier, use of the test is suspect.

Every learner questionnaire indicated that English skill improved. Instructor questionnaires also said this, except for one control group, where the instructor was not so sure. For the control group, instructors generally felt that reading and writing improved more than speaking. Supervisors also generally agreed that English skills improved.

While virtually all the learners improved their English language skill, it cannot be said that the experimental group made greater gains than the control group regarding English language skill. The pattern of results was similar for both groups, with possibly the experimentals doing more in oral skills and controls doing more in written skills.

The hypothesis of greater English language skill gained by experimental learners is partially confirmed.

4.2.2 THINKING SKILLS

A clear difference emerges between the experimental and control groups on thinking skills, as reported by the instructors and the students. Instructors say the students in the experimental group "definitely" improved their thinking skills, while the majority say there was no improvement in thinking skills in the control group. All of the students in the experimental group, and all but one in the control group, said they felt that their thinking skills improved. However, the control group did not elaborate, but the experimental group had a lot to say, giving some of the tools they had learned, and adding several comments about when they think and what they think about. By their very elaboration they are giving evidence that they think better.

Instructor logs and reports and supervisor checklists did not in the end include comparative data on thinking, so no conclusions can be drawn from these sources. The oral test of thinking, given in the de Bono style, could not be appropriately analyzed because of incomplete data and is inconclusive. Use of the ITB is suspect.

The hypothesis that experimental groups would show greater gains in thinking than control groups is partially confirmed.

4.2.3 ATTITUDE

Attitude (including self-confidence, self-image, and motivation) was not tested quantitatively because appropriate tests are not available. Qualitatively, attitude differences can be seen in questionnaires returned by students and instructors, in instructor logs and reports, and on the checklist for supervisors.

Learners in both groups, according to their questionnaire reports, generally were grateful to GFTS and to their instructors for the course and for the "VIP" treatment. They felt empowered because they had learned. They felt encouraged to carry on, to "face the future." They felt better about themselves. They felt motivated to keep on learning English. Their responsiveness and their confidence improved.

The groups showed important differences. The experimental group showed more vitality, while the control group seemed more passive. The experimental group seemed more critical and thoughtful than the controls, and they voiced frustration with their placement, while the controls were silent about placement.

On instructor questionnaires, differences emerge. Instructors saw the experimentals as much more positive as a result of the course. One control instructor felt there was no difference, not even self-confidence.

Regarding self-image, instructors felt that experimentals improved and controls did not, or only slightly. Instructors said that experimental group learners were much more confident, control group learners slightly more if at all.

Findings on positive attitude seem clearly related to the the INTUS special approach.

The hypothesis that experimental groups would show greater improvement on attitude than control groups is confirmed.

4.3 CONCLUSIONS REGARDING TESTS

1 The LITNUM and the ITB, even used together, do not seem adequate for placement in English courses.

2 The BALT B seems to have some potential for placement purposes.

3 The EPPI is not effective when implemented by persons without knowledge of L2 theory and research.

4 A refined and specific placement instrument is needed, one that can be used by those who are not language teachers.

5 The BALT B and the Interview Score (Carroll's bands) correlate significantly as general language tests.

6 The connection between language and thinking is supported empirically by the significant correlation between post-test measures of language on the BALT B and thinking on the ITB.

4.4 PROBLEMS WITH THE RESEARCH

1 The same instructors taught both control and experimental groups. There were indications that not enough differentiation was made between the control and experimental treatments. Given the practicalities, there was no alternative.

2 Two tests, the BALT B and the ITB, did not seem to function as proficiency tests.

3 There is a lack of reliable and valid tests appropriate for these learners, and especially so when a three-week time frame is used.

4 Numbers of subjects were quite small.

5 Accuracy of qualitative data is questionable.

6 Despite fine company co-operation, several levels of communication to obtain both subjects and test results proved extremely complex.

4.5 FINAL OBSERVATIONS

The INTUS special approach seemed to bring about more oral language acquisition and more active thinking in the experimental group. Also, the learners enjoyed it. The approach seemed to bring about more positive attitudes and better self-image.

Learners in the experimental group seemed to like their materials and exercises better than learners in the control group liked theirs.

Instructors seemed to respond better to the INTUS special approach than to the control-group approach. They rated about twice as many teaching days as good, compared to the control group.

The study was a successful one in that many things were learned and established. Problems were raised, and progress was made on on-going issues within industrial training as well as within second language teaching and research.

Special thanks must be extended to all the people at Gold Fields who worked well and hard in the study, despite its bringing them additional work. A special note of thanks is due to the instructors and learners, who make the contact where teaching and learning can happen.

4.6 RECOMMENDATIONS

1 Improve placement of learners in the classes.

It is doubtful that placement can be done according to results on the English part of the LITNUM test. The EPPI seems to help, provided it is administered by well-trained language teachers, but it is not enough. The English part of the BALT B bears further examination for this purpose. A new interview test is being developed for GFTS that may meet this placement need. It may also meet the proficiency need.

2 Extend English courses to other levels, using the INTUS special approach.

Start with high intermediate and advanced courses, and then develop beginning levels. Include reading and writing emphases. The INTUS approach can result in good language learning as well as improved thinking and more positive attitudes. As such, it offers good value for money in several ways. It offers development of human potential that transcends language.

3 Give more support to the language instructors at GFTS.

They seem stretched thin trying to do quality work.

4 Have milestones or markers of achievement that offer recognition and form attainable objectives in the eyes of the learners. Do this in a professional way so that it starts out with credibility.

5 Use the INTUS special approach within GFTS for the teaching of other subjects in addition to language.

The method seems enjoyable to the learners, and thinking skills can be incorporated into many training efforts such as lectures on mining, for example. The improved speaking, thinking, attitudes and self-image of the learners using the INTUS special approach indicates valuable benefits to the company.

6 Offer co-ordinated and wider educational opportunities to workers like the team leaders.

Perhaps starting with English courses, develop a "learning track" or progression of courses that learners can enter with whatever educational background they have, and can work consistently to improve that background. It is de-motivating to both learners and instructors when wonderful learnings happen, and then it all just stops. If other sources of teaching can be found, GF may not need to sponsor all the courses, but rather to point them out to learners and help them get started, offer support, etc.

There is potential and ambition in this group, and it may be found in other groups within the work force. It must be identified and developed, for the workers, for the company, and for society.

7 Conduct a follow-up study of what the workers do in the work place with their improved English, thinking skills, and attitudes.

Note whether they can and do use what they learned, and whether follow-up seminars may be helpful.

8 Support the development of assessment instruments for industrial workers.

Perhaps this can be done in connection with the INTUS, Chamber of Mines, and the Human Sciences Research Council. Tests that measure gains are especially needed. Relevant areas include English, thinking ability, and possibly aspects of attitude.

9 Help all employees develop better cross-cultural competencies for job-related interaction.

Cultures have differing beliefs, value, behaviours, and ways of interacting that transcend language. Seeing others only from one's own cultural frame of reference can result in big and often unnecessary problems. The "fresh" behaviours of some learners seems a good example.

10 Incorporate the explicit teaching of thinking skills into a variety of courses and training efforts already in place.

The experimental group indicates that such training is possible and that positive benefits can be realized. Such teaching must be explicit so that learners can retrieve a skill and apply it to new situations as they find it useful to them. They must know the skills, and also at the level of meta-cognition, they must know that they know.

11 Explore the idea of community as motivation within your work force.

Motivation concerns why people do what they do. Why do employees come to work every day? Obviously they come to get a pay check. Certainly true, it is not the only reason. Other reasons can be seen when one asks: Why do people change jobs? For pay of course, but after that may come quite a list of reasons, including benefits and working conditions. Working conditions generally include the people one works with on a day-to-day basis, and may include the meaning a person feels in a particular job within the organization.

One could not help but note the sensitivity of the students to other people, not just to their bosses but to their peers and others within their societal reach. Comments can be seen in Qualitative Analysis of Learner Questionnaires, Section 3.5.2, especially questions 4, 6, 7, 11 for the experimental groups, question 7 for the control groups, and in the discussion "The Learners as a Whole". One typical comment:

"I want to go help other people at work and teach them English and other things I know".

This feeling of oneness with others, or community, is a powerful force that could be channelled into educational matters, as the quote also shows.

There can be study groups, reading groups, library groups, small after-hours educational groups on almost any topic. Learners can help one another, as in peer tutoring, and encourage one another, as in taking a course together, getting to classes, and doing homework. This could happen with minimal cost to the company, though some structure and leadership are required. The idea of working to improve one's self for the sake of others, versus working to get ahead of others, seems to emerge from the data and may be a useful learning for the improvement of both workers and company.

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APPENDICES

A ENGLISH PROFICIENCY PLACEMENT INTERVIEW (EPPI)
B THE TEACHING OF THINKING
C DIRECTIONS TO SCORERS
D SCORE SHEET FOR ANALYSIS OF LANGUAGE SAMPLES ON TAPE
E INTERVIEW ASSESSMENT SCALE
F LANGUAGE BACKGROUND QUESTIONNAIRE (LBQ)
G QUESTIONNAIRE FOR LEARNERS
H QUESTIONNAIRE FOR INSTRUCTORS
I INSTRUCTOR'S DAILY LOG - EXPERIMENTAL COURSE
J INSTRUCTOR'S DAILY LOG - CONTROL COURSE

Appendix A

ENGLISH PROFICIENCY PLACEMENT INTERVIEW (EPPI)

This scale has been developed by the Institute for Language Teaching, University of Stellenbosch, specifically for mine workers. It was adapted by J. Roux and C. Puhl from the General Assessment Scale of B. Carroll, TESTING COMMUNICATIVE PERFORMANCE, Pergamon Press, 1984.

WHAT: The English Proficiency Placement Interview (EPPI) is a way to determine a person's skills in listening and speaking in English. After the interview, the interviewer makes an informed judgment or assessment of oral English skills according to a given five-point scale.

WHY: The ONLY purpose of the interview is to serve as one factor among others for placing learners in classes appropriate for their skill level. People learn more when they are taught together with others at the same level, and the EPPI, along with the Industrial Test Battery (ITB) and Literacy and Numeracy Test (LITNUM), is designed to help identify learners who have the same level of skills, and thus about the same level of needs, in English. It is necessary to have an oral test because a person can be good at written skills in a language (reading and writing) and still not be good at oral skills (listening and speaking), and vice versa. The lack of a clear relationship between oral and written skills makes the EPPI necessary for homogenous grouping.

WHERE: The EPPI can be given on each mine's training site. A comfortable setting is desirable.

WHEN: Because it is brief, the EPPI can be given before or after the learner is tested on the ITB, LITNUM, or BALTB (Basic Arithmetic and Language Test Battery). It can also be given before or after his work shift, or at another time when the learner is available. It shouls not be necessary to have the learner miss work for this interview.

WHO: The EPPI is appropriate for any adult for whom English is not the mother tongue.

HOW: The interviewer must have some training in conducting the interview. Basically, he or she must converse with the learner so that:

(a) communication takes place, and

(b) the learner gets a change to give enough of a sample of his English so that a judgement or assessment can be made. A few minutes is usually enough.

Some questions are suggested to help get started in the interview, but these questions are not really necessary as long as there is conversation. The specific content is not so important. Communication that elicits talk is what is wanted. If the learner offers a comment or information, it may be useful to follow up on this topic.

Two major concerns in any test are reliability and validity. A test is reliable if it gives consistent results. For example, if two judgements of the same learner vary widely, and if this happens too often, then the test is not considered reliable. A test is valid if it measures what it is supposed to measure. For example, if a test is supposed to measure oral skill but is given in writing, then it is unlikely to be a valid measure of speaking. In an oral language test, the training of interviewers usually improves reliability to an acceptable degree, and the type of interview, if straightforward, will show face validity to an acceptable degree.

Points for interviewer in conducting the interview:

(a) The learner will probably be very nervous. Be warm and friendly, chat with him, help him relax. He may not know why he is being called in. It often helps if you explain to him that the purpose is to find out his level of English so that he can attend classes with the group that is right for him. The interviewer should avoid writing.

(b) Be careful to follow the criteria for each level as closely as possible. Try not to let your liking or your dislike of a person influence your judgement of his oral skills in English.

(c) It may be helpful to interview in the form of a group conversation, so that the learner does not feel so much "on the spot". One can have two learners, two interviewers, or other people present and participating in the interview. If a learner is too quiet, one can always direct questions to him to elicit talk.

(d) Remember that you are engaging in human interaction. Be kind and respectful of the person at all times, and try to help him not to feel inadequate. We all are very ego-sensitive when we speak in a language other than our mother tongue.

(e) Such interviewing is hard work. You must draw out the learner if necessary, and you must be making judgements on proficiency. Do not schedule too many people at any one session. Give yourself some break time.

(f) It may help you, especially when you are new at giving this interview, to work together with a colleague. You can then discuss the interview and arrive at a joint judgement.

(g) If a person does not respond, try to give him some prompts. Do your best to elicit talk. However, if things become tense or difficult, than discontinue the interview.

(i) A note of caution: Be careful of making judgements that are hasty. Even an experienced interviewer must give the learner sufficient speaking time for arriving at a good assessment.

POSSIBLE INTERVIEW QUESTIONS:

1 (Greeting) How are you today? Etc.

2 (Home) Where are you from? Does your family live there? Are you married? Children? Etc.

3 (Job) How long have you been working here? What work do you do? Etc.

4 (Goals) What are your future plans? When does your contract finish? When will you go to (place he is from)? Etc.

5 (Interests) Do you like sports? Which ones? Do you like to play any sports? What is your favorite team or sports person? Etc.

6 (Open-ended) Is there anything you would like to ask me?

ENGLISH PROFICIENCY PLACEMENT INTERVIEW (EPPI) SCALE

Level 9. EXPERT USER. Communicates with authority, accuracy, and style. Is completely at home with English.

Level 7. GOOD USER. Can cope in most situations in an English-speaking environment. Occasional mistakes do not prevent communication.

Level 5. MODEST USER. Manages to communicate, with difficuty and extra time. Often uses inaccurate or inappropriate language.

Level 3. LIMITED USER. Does not have a working knowledge of the language for day-to-day purposes, but better than an absolute beginner. Not much continuous communication.

Level 1. NON-USER. Has little or no English.

Appendix B

THE TEACHING OF THINKING

(Course Notes from Mrs B Capdevielle, January 1988)

1 **Objectives of Teaching Thinking:**

To promote a reflection process by diminishing the rate of impulsion before the emission of judgements and opinions;

To learn to develop useful patterns of thinking for different types and levels of complexity of problem-solving situations;

To stimulate the organization of thoughts in order to facilitate an adequate handling of information;

To develop critical thinking;

To promote consciousness in the individual of his or her own capacities and of the social importance of one's work;

To increase self-esteem, trust in one's self and generation of self-promoting behaviours.

2 **Thinking Skills Selected from CoRT 1, Cognitive Research Trust, E de Bono (1986)**

P N I Positive, Negative and Interesting. The deliberate examination of an idea or situation in terms of its positive, negative and interesting aspects, instead of its immediate acceptance or rejection.

C A F Consider All Factors. The consideration and listing of all the factors involved in a situation, instead of taking into account only the most immediate.

F I P First Important Priorities. The determination of the importance of each aspect of a situation.

A G O Aim, Goals and Objectives. The definition and establishment of ends in a given situation.

C & S Consequences and Sequels. The consideration of the outcomes in the immediate, short, medium and long term.

O P V Other People's View. The consideration of the points of view of all the people involved in a given situation.

SUMMARY OF THE SIX THINKING HATS METHOD

Taken from the book "The Six Thinking Hats" by Edward de Bono

The purpose of the six thinking hats is to **unscramble** thinking so that a thinker is able to use one thinking mode at a time - instead of trying to do everything at once.

This method is designed to switch thinking away from the normal argument style to a **mapmaking** style. This makes thinking a two-stage process. The first stage is to make the map. The second stage is to choose a route on the map.

It is the very **artificiality** of the hats which is their greatest value. They **provide a formality and a convenience** for requesting a certain type of thinking either of oneself or of others. They establish rules for the game of thinking. Anyone playing the game will be aware of these rules.

The great value of the hats is that they provide **thinking roles.** A thinker can take pride in play-acting each of these roles. Without the formality of the hats, some thinkers would remain permanently stuck in one mode (usually the black hat mode).

RED HAT

Wearing the red hat allows the thinker to say: **"This is how I feel about the matter".**

The red hat **legitimizes emotions and feelings** as an important part of thinking.

The red hat makes feelings visible so that they can become part of the thinking "map" and also part of the value system that chooses the route on the map.

The red hat provides a convenient method for a thinker **to switch in and out of the "feeling" mode** in a way that is not possible without such a device.

The red hat allows a thinker to explore the **feelings of others** by asking for a "red hat view".

When a thinker is using the red hat there should **never** be any attempt to **justify the feelings** or to provide a logical basis for them.

The red hat covers two broad types of feelings:

Firstly, there are the **ordinary emotions** as we know them, ranging from the strong emotions such as a fear and dislike to the more subtle ones such as suspicion.

Secondly, there are the **complex judgements** that go into such types of feelings as hunch, intuition, sense, taste, aesthetic feeling and other not-visibly-justified types of feelings. Where an opinion has a large measure of this type of feeling, it can also fit under the red hat.

WHITE HAT

The white hat is **neutral, objective.**

It does not offer interpretations or opinions.

It gives **facts** and **figures.**

In practice there is a two-tier system of information:

The first tier contains checked and proven facts: **first class facts.**

The second tier contains facts that are believed to be true but have not yet been fully checked: **second class facts.**

There is a spectrum of likelihood ranging from always true to never true. In between there are usable levels such as "by and large", "sometimes", and "occasional". Information of this sort can be put out under the white hat - provided the appropriate "frame" is used to indicate the likelihood.

White hat thinking is a **discipline** and a **direction.** The thinker strives to be more neutral and more objective in the presentation of information.

YELLOW HAT

Yellow hat thinking is **positive and constructive.** The yellow color symbolizes sunshine, brightness and optimism.

Yellow hat thinking is concerned with **positive assessment.**

Yellow hat thinking covers a positive spectrum that ranges from the logical and practical at one end to dreams, visions and hopes at the other end.

Yellow hat thinking probes and explores for value and benefit. Then, it strives to find logical support for this value and benefit.

Yellow hat thinking seeks to put forward soundly-based optimism but is not restricted to this - provided other types of optimism are appropriately labeled.

Yellow hat thinking is constructive and generative. It is from yellow hat thinking that come concrete proposals and suggestions.

Yellow hat thinking is concerned with **operacy** and with **"making this happen".**

Effectiveness is the aim of yellow hat constructive thinking.

Yellow hat thinking can be **speculative** and **opportunity seeking.** It permits visions and dreams.

Yellow hat thinking is not concerned with mere positive euphoria, nor directly with creating new ideas.

BLACK HAT

Black hat thinking is specifically concerned with **negative assessment.** The black hat thinker points out what is **wrong, incorrect** and in **error.**

The black hat thinker points out how something does not fit experience or accepted knowledge.

The black hat thinker points out why something will not work. It points out **risks** and **dangers.** It points out **faults** in a design.

Black hat thinking is not an argument and should never be seen as an objective attempt to put the negative element onto the map.

Black hat thinking may point out the errors in the thinking procedure and method itself.

Black hat thinking may judge an idea against the past to see how well it fits what is known.

Black hat thinking may also project an idea into the future to see what might fail or go wrong.

Black hat thinking can ask "negative questions".

Black hat thinking should not be used to cover negative indulgence or negative feelings which should make use of the red hat.

GREEN HAT

The green hat is for **creative thinking**.

The person who puts on the green hat is going to use the idioms of creative thinking.

The green color symbolizes fertility, growth and the value of seeds.

The **search for alternatives** is a fundamental aspect of green hat thinking. There is a need to go beyond the known and the obvious and the satisfactory.

With the creative pause the green hat thinker pauses at any point to consider whether there might be alternative ideas at that point. There need be no reason for this pause.

In green hat thinking the **idiom of movement** replaces that of judgement. The thinker seeks to move forward from an idea in order to reach a new idea.

Provocation is an important part of green hat thinking and is symbolized by the word po. A provocation is used to take out of our usual patterns of thinking.

Lateral thinking is a set of attitudes, idioms and techniques for cutting across patterns in a self-organizing asymmetric patterning system.

Lateral thinking is used to generate new concepts and perceptions.

BLUE HAT

The blue hat is the **control** hat. The blue hat thinker organizes the thinking itself. Blue hat thinking is **"thinking about the thinking needed to explore the subject".**

The blue hat thinker is like the **conductor of the orchestra.** It calls for the use of the other hats.

The blue hat thinker **defines** the subject towards which the thinking is to be directed. It sets the **focus.** It defines the problems and **shapes** the questions. It detemines the thinking tasks that are to be carried through.

Blue hat thinking is responsible for **summaries, overviews** and **conclusions.**

Blue hat thinking **monitors the thinking** and ensures that the rules of the game are observed.

Blue hat thinking **stops argument** and insists on the "map" type of thinking. Enforces the **discipline.**

Blue hat thinking may be used for occasional interjections which request one or other hat. It may also be used to set up a step by step sequence of thinking operations which are to be followed.

Blue hat thinking is the **choreographer** of a play.

Appendix C

DIRECTIONS TO SCORERS

In this packet are tapes containing language data and thinking skills data per group. Included is a list of student names, including real names. You do not know whether tests are pretests or posttests, experimental or control groups. In fact, we mixed them up so that there is no predictable order of tests.

To Language Scorers:

1 Please give a score per learner for one test session, then another score per learner for the other test session.

2 Please report the two sessions **separately** although on the same page.

3 Please identify by **surnames** as this is the only way we can keep track of the learners.

4 Please be sure to mark the session to correspond to label on tape.

To Thinking Skills Scorers:

The group has been giver 4 problems to solve. You shall find one session with two problems, and another session with two problems. The scoring procedure follows that of Edwards (copy attached).

The score is based on an idea count. So for each problem could you:

1 List the ideas given by the learners. The order of ideas is not important. If an idea is repeated, do not count it a socond time. However, there may be subtle variations which make it a new idea.

2 Give the total number of ideas presented.

NOTES:

1 If there is extraneous material at the end of the language or thinking skills tape, please ignore it. Perhaps the instructor used old tapes.

2 There may be variations in format, hopefully not too difficult to follow.

3 Sometimes long pauses occur, so please be sure you have listened to all the tape.

Appendix D

SCORE SHEET FOR ANALYSIS OF LANGUAGE SAMPLES ON TAPE

Language Scoring (Carroll's Bands)

One session: Tape Code

NAME **BAND**

Other Session: Tape

NAME **BAND**

Comments if any:

Scorer's signature:

Date:

Appendix E

INTERVIEW ASSESSMENT SCALE (CARROLL'S BANDS)

Band	
9	**Expert speaker.** Speaks with authority on a variety of topics. Can initiate, expand and develop a theme.
8	**Very good non-native speaker.** Maintains effectively his own part of a discussion. Initiates, maintains and elaborates as necessary. Reveals humour where needed and responds to attitudinal tones.
7	**Good speaker.** Presents case clearly and logically and can develop the dialogue coherently and constructively. Rather less flexible and fluent than Band 8 performer but can respond to main changes of tone or topic. Some hesitation and repetition due to a measure of language restriction but interacts effectively.
6	**Competent speaker.** Is able to maintain theme of dialogue, to follow topic switches and to use and appreciate main attitude markers. Stumbles and hesitates at times but is reasonably fluent otherwise. Some errors and inappropriate language but these will not impede exchange of views. Shows some independence in discussion with ability to initiate.
5	**Modest speaker.** Although gist of dialogue is relevant and can be basically understood, there are noticeable deficiencies in mastery of language patterns and style. Needs to ask for repetition or clarification and similarly to be asked for them. Lacks flexibility and initiative. The interviewer often has to speak rather deliberately. Copes but not with great style or interest.
4	**Marginal speaker.** Can maintain dialogue but in a rather passive manner, rarely taking initiative or guiding the discussion. Has difficulty in following English at normal speed; lacks fluency and probably accuracy in speaking. The dialogue is therefore neither easy nor flowing. Nevertheless, gives the impression that he is in touch with the gist of the dialogue even if not wholly master of it. Marked L1 accent.
3	**Extremely limited speaker.** Dialogue is a drawn-out affair punctuated with hesitations and misunderstanding. Only catches part of normal speech and unable to produce continuous and accurate discourse. Basic merit is just hanging on to discussion gist, without making major contribution to it.
2	**Intermittent speaker.** No working facility; occasional, sporadic communication.
1/0	**Non-speaker.** Not able to understand and/or speak.

Appendix F

LANGUAGE BACKGROUND QUESTIONNAIRE (LBQ)

To the learner: Would you please fill out the following form. The information will help us to know you better and to teach better. Thank you very much.

1 Name .....

2 What is your mother tongue? .....

3 Which country are you from? .....

4 Which other languages do you speak? .....

.... A little? A lot?

.... A little? A lot?

.... A little? A lot?

5 Which languages can you read or write? .....

....

6 Have you had ANY other training session using English? .....

If so, in what year: ....

7 How many hours a week do you watch TV in English? .....

What are your favourite TV programmes? .....

....

....

8 How many hours a week do you listen to the radio in English? .....

....

What are your favourite radio programmes? .....

....

....

9 How old are you? .....

10 How many years have you been working on the mines? .....

11 When you left school, which class were you in? .....

12 Are you living in a hostel or with your family? .....

13 What language do you speak most at work? .....

14 What language do you speak most when not at work?.....

....

15 Is there anything you would like to ask, or tell us? .....

....

....

....

....

Appendix G

GOLD FIELDS TRAINING SERVICES (PTY) LIMITED

QUESTIONNAIRE FOR LEARNERS

(Please read to the learner and record his answers. This could also be filled out for the group as a whole).

Dear Learner: We need to know your ideas in general about this course, so that we can keep on making it better. Would you please answer the questions that follow as best you can. THERE ARE NO RIGHT OR WRONG ANSWERS, AND YOUR NAME IS NOT ON THIS PAPER, SO FEEL FREE TO BE VERY HONEST. If you can give us an example or tell us something that happened, that would be great. Thank you for helping us and other students who come after you.

1 What did you like best about this course?.....

.....

.....

2 What didn't you like about this course?.....

.....

.....

3 Is there anything you want to ask?.....

.....

.....

4 Do you feel that you are in any way different now than before you took this course? ..

If so, different in what way? Toward yourself, and if so, how? .....
Toward others, and if so, how?

.....

.....

.....

5 What were the main things you learned on this course? Give as many things as possible.....

.....

.....

6 Have you used anything you learned on this course in your work, or in your life in general? (If so, what?).....

.....

.....

7 Please give us a comment or thought, or anything you would like to say.....

.....

.....

.....

8 Do you feel that you can think better? If so, a lot or a little? In what ways?.....

.....

9 Was this course easy or hard? .....

10 Was the course too long/too short/just right? .....

Appendix H

GOLD FIELDS TRAINING PROJECT

QUESTIONNAIRE FOR INSTRUCTORS

To the Instructor: We need some general feedback from you regarding this three week course. To us this is very important information. Would you kindly answer the questions below. We need you to answer them as best you can in a reasonable amount of time with a) honesty, b) accuracy, and c) clarity. Examples, anecdotes, incidents, special moments, statements from your learners, experience, both positive and negative, your personal observations and opinions. Also, any observations you may have on this three week session of your learners learning a) language and b) thinking skills.

1 The things you liked best about conducting this course were:

.....

.....

.....

2 The things you didn't like about conducting this course were:

.....

.....

.....

3 Do you have any questions, on course material, method of teaching?

.....

.....

.....

4 Do you feel you are any way different now than before you taught this kind of course? (If so, how?).....

- Towards self .....

- Towards others .....

5 As you see things, the learner responded to this course in the following ways: .....

.....

.....

6 Do you feel that your learners' language skills improved during this course? (Please elaborate).....

.....

.....

7 Their thinking skills? (Please elaborate).....

.....

.....

8 Their attitudes? (Please elaborate).....

.....

.....

9 Their self-image? (Please elaborate).....

.....

.....

10 Would you just say a few other words, anything .....

.....

.....

.....

.....

Appendix I

INSTRUCTOR'S DAILY LOG: EXPERIMENTAL COURSE

1 EXPERIMENTAL COURSE NO.:_____

2 DAY NO.: _____ DATE_____

3 INSTRUCTOR: _____

4 TEACHING MATERIALS

4.1 TEXT USED: _____

EVALUATION: GOOD AVERAGE BAD

REASONS:_____

_____

_____

4.2 SUPPORTING MATERIALS USED (visualizations, peripherals, reading materials etc.):

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS: _____

_____

_____

4.3 AUDIO-VISUAL MATERIALS USED:

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS: _____

_____

_____

4.4 ACTIVATIONS EMPOYED (games etc.):

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS: _____

_____

_____

4.5 THINKING SKILLS TAUGHT:

_____

COMMENTS: _____

_____

_____

5 STUDENT RESPONSE

TO TEXT	GOOD	AVERAGE	BAD
TO SUPPORTING MATEIALS	GOOD	AVERAGE	BAD
TO AUDIO-VISUALS	GOOD	AVERAGE	BAD
TO ACTIVATIONS	GOOD	AVERAGE	BAD
TO THINKING SKILLS	GOOD	AVERAGE	BAD

COMMENTS PERTAINING TO TOPICS ABOVE:

_____

_____

6 SPECIFIC ANECDOTES, COMMENTS ETC. FROM LEARNERS

_____

_____

7 INSTRUCTOR – GENERAL REMARKS, OBSERVATIONS ETC.:

_____

_____

8 INSTRUCTOR'S EVALUATION OF THE ACTIVITIES OF THE DAY AS A WHOLE:

INSPIRING, VERY SUCCESSFUL

GOOD, SUCCESSFUL

AVERAGE

BAD, UNSUCCESSFUL

UNINSPIRING, VERY POOR

Appendix J

INSTRUCTOR'S DAILY LOG: CONTROL COURSE

1 CONTROL COURSE NO.:_____

2 DAY NO.: _____ DATE_____

3 INSTRUCTOR: _____

4 TEACHING MATERIALS

4.1 BASIC MATERIALS USED (AUDIO-VISUAL ETC.):_____

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS:_____

_____

_____

4.2 SUPPORTING MATERIALS USED (reading, comprehension etc.):

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS: _____

_____

_____

4.3 ACTIVATIONS/EXERCISES:

_____

_____

EVALUATION: GOOD AVERAGE BAD

REASONS: _____

_____

_____

5 STUDENT RESPONSE

TO TEXT	GOOD	AVERAGE	BAD
TO SUPPORTING MATERIALS	GOOD	AVERAGE	BAD
TO EXERCISES	GOOD	AVERAGE	BAD

COMMENTS PERTAINING TO TOPICS ABOVE:

_____

_____

6 SPECIFIC ANECDOTES, STATEMENTS, COMMENTS ETC. FROM LEARNERS:

_____

_____

7 INSPTRUCTOR -- GENERAL REMARKS, OBSERVATIONS ETC.:

_____

_____

8 INSTRUCTOR'S EVALUATION OF THE ACTIVITIES OF THE DAY AS A WHOLE:

INSPIRING, VERY SUCCESSFUL

GOOD, SUCCESSFUL

AVERAGE

BAD, UNSUCCESSFUL

UNINSPIRING, VERY POOR